coresearch 176

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CSIRO to review its medical research policy

More emphasis may be placed on nutrition

CSIRO is currently giving consideration to the impact of its work relating to medical research and the Executive proposes to create a CSIRO Medical Research Liaison Committee on which both CSIRO and medical interests will be represented.

Aware that many of CSIRO's activities are already in fields related to human health, the Executive last year asked Professor Frank Fenner, formerly Director of the John Curtin School of Medical Research at the Australian National University, to prepare a report for the Advisory Council.

All Divisions were consulted on any work they might be doing in this field and later Professor Fenner met to talk with representatives of the Executive and the 22 of the 36 Divisions that were involved in some aspect of the work. Afterwards Professor Fenner visited some of the Divisions and held further discussions with the Chiefs and scientific staff.

In his report to the Advisory Council, Professor Fenner's recommendations were in two parts. Those that were related directly to CSIRO were that the Organization should:

- establish a CSIRO Committee on Medical Research
- review its official attitude on medical research
- establish a Division of Human Nutrition.

Professor Fenner also suggested that the Australian Government should:

- set up an Australian Medical Research Council separate from the National Health and Medical Research Council, which would become the National Health Council
- establish an Australian National Institute for Medical Research with a focus on social and environmental medicine, under the control of the Australian Medical Research Council, and with CSIRO conditions of employment of research staff.

CSIRO research

In summarising his report, Professor Fenner said that a considerable amount of basic research in biomedical science was conducted by CSIRO scientists in the course of their normal work, particularly in those Divisions concerned with animal health and food production. Outside the Organization, research in biomedical and clinical research was conducted mainly in the medical schools of the State universities, in private medical research institutes and in the John Curtin School of Medical Research at the A.N.U.

'This research is sometimes not satisfactorily exploited in relation to human health because of the absence of effective liaison between CSIRO and medical research workers, or because an organisation for conducting the appropriate follow-up medical research does not exist in Australia,' he said.

Informal arrangements were sometimes made by CSIRO scientists for collaboration with research workers engaged in clinical or public health research, and specialist organisations such as the Australian Biochemical Society and the Australian Society for Microbiology have played an important role in encouraging informal contacts between CSIRO scientists and medical research workers in other organisations, the report continued.

The type of biomedical research which CSIRO is already involved in included:

- zoonoses (diseases transferable from animals to man)—Animal Health, Wildlife Research
- immunology of worm and bacterial infections, and asthma —Animal Health, Protein Chemistry
- influenza virus vaccine; synergism of antibacterial compounds (working together of antibacterial compounds with body tissues and substances) —Animal Genetics
- reproductive physiology, endocrinology, polyunsaturated fat meats and milk products —Animal Physiology, Food Research, Nutritional Biochemistry
- climate physiology—Mechanical Engineering, Chemical Physics, Animal Physiology
- sewerage treatment and removal of viruses—Applied Chemistry
- muscular dystrophies—Food Research, Protein Chemistry, Nutritional Biochemistry
- collagens and ageing; wool allergenic properties — Protein Chemistry
- advice on statistical aspects of many programmes of medical research — Mathematical Statistics
- biomedical engineering—Tribophysics
- 'safe' cigarettes: wool filters and lowering of tar/nicotine content of leaf — Textile Physics, Tobacco Research.

Cont'd on page 4

New secretary

Phil O'Brien, Personnel Officer for the ACT and Northern Territory, has been elected to the position of ACT Branch Secretary of the Administrative and Clerical Officers' Association. He has been granted leave of absence to enable him to take up his appointment.

Phil joined the Head Office Staff Section in 1965 and transferred to Canberra in 1967. He has always been active in ACOA activities, and for the past three years has been President of the ACT Division of the Council of Commonwealth Public Service Organizations.

NEW CHIEF FOR 'MATH STATS'

An Australian, Professor J. Gani, who has won an international reputation in the field of probability and statistics, has been appointed the new Chief of the Division of Mathematical Statistics.

Currently, Professor Gani is Director of the Manchester-Sheffield Universities' School of of Probability and Statistics and in the past has held senior positions in mathematics and statistics at universities in Australia, the USA and Canada.

Now 48 years of age, Professor Gani received his PhD from the Australian National University in Canberra in 1955 and was awarded the degree of DSc from London University in 1970.

He has published 60 research papers on mathematical statistics and applied probability and has written two textbooks on statistics.

Last year Professor Gani came to Australia at the request of the Executive to review and report on the future activities of the Division and he will be back again early this month for a week-long planning session in Canberra and probably Adelaide.

Because the Executive has concluded that in future greater emphasis should be placed on applied mathematics research, the name of the Division is to be changed to Mathematics and Statistics nearer the time Professor Gani takes over.

The headquarters of the Division will also be shifted to Canberra about that time but it is not intended that the group at Adelaide will be shifted to the ACT en masse.

Discussing the changes with the staff at a recent Division conference, Mr V. D. Burgmann of the Executive said that the growth of the Division in future would be concentrated more in Canberra than in other centres and that Professor Gani would make that city the base from which he would operate.

More interest for investors

The Directors of the Laboratories Co-operative Limited in Canberra have reviewed the current interest rate paid by the Co-operative. The interest rates payable from 1 January will now be:

- fortnightly deductions from salary — 7 per cent
- short term deposits (under 12 months) — 7 per cent
- long term deposits (over 12 months) — 7½ per cent.

The Co-operative is interested in arranging fortnightly savings and term deposits from all staff. Inquiries should be directed to Mr M. Bakker, Regional Administrative Office, P.O. Box 500, Civic Square, ACT 2608.

'Sun Pictorial photo'

It's madam president now

CSIRO scientist, Ms Barbara Keogh, has been elected the new president of the Melbourne Sciences Club, an organisation in which men outnumber women nearly 30 to one. It is the first time the club has chosen a woman for the position.

A microbiologist, Barbara has worked for CSIRO for nearly 20 years and is a member of the staff of the Dairy Research Laboratory of the Division of Food Research at Highett. Most of her work is concerned with research studies relating to cheese starter organisms, but she is interested in microbiological problems of the dairy industry in general.

The club has 1400 members, 50 of them women, and Barbara was one of its foundation members when it started in 1968. Membership is made up of scientists and technologists who belong to scientific societies affiliated with the Clunies Ross Foundation.

Members meet regularly to discuss their work, to hear guest speakers talk not only on science, but on topics of community interest, and to thrash out their problems.

Max Planck Society concerned with community relations

At a time when CSIRO is becoming increasingly aware of the effects of modern science and technology on the general public and is looking at ways by which 'future shock could be alleviated', it is interesting to note that overseas scientific organisations are equally concerned with the situation.

One of these is the Max Planck Society for the Advancement of Science.

This organisation, which has its headquarters in Munich, is made up of 49 Institutes in much the same way as CSIRO has its 36 Divisions. It has a staff of 10,000 people, about 2000 of whom are permanent scientists or academics in other disciplines, and a further 2000 who enjoy guest status.

(CSIRO in comparison has a staff of about 6600, about one-third of whom are scientists.)

'Two years ago we set up a special institute with the specific aim of looking at this impact of science and technology on ordinary people,' Professor Dr R. Lust, the President of the Society, told 'Coresearch' during his recent visit to Australia.

'It is headed by two directors —one a physicist and the other a social scientist.

'The staff is made up of physicists, social scientists and economists. It's too early yet to talk about the outcome of their findings. They mightn't be able to give us satisfactory answers to our queries at all, but at least we've made a start into the research we feel this needs.'

Professor Dr R. Lust

Communication

In the meantime, Professor Lust said, a practical way of communicating the work of scientists to the man in the street was being undertaken through the Society's public relations group.

'We have the staff going into the various Institutes, discovering exactly what our scientists are doing and then translating this into lay language for ordinary people to understand. In this way we're trying to get better communication between scientists and the general public.

'During the year we also invite groups of journalists, especially science writers, to visit the Institutes and spend two days at our expense seeing what is being done by the scientists. In this way we hope that more and more of them will have a better understanding and appreciation of the scientists' work.'

Talking about the society in general, Professor Lust said that the Institutes could be divided in three sections:—

- the humanities
- biology and medicine
- physics, chemistry and engineering.

'Then there is one group which is completely independent of the rest. Their task is to search through the work of the other institutes to see if any of their achievements are worthy of production in some form or another.

Research

'Our work is based on fundamental research which the scientists themselves want to do. We don't accept requests from say industry or agricultural organisations to work on specific projects as does CSIRO.'

The Society has an annual budget of $US220 million, 85 per cent of which comes from the Government and the rest from private sources.

'But the Government doesn't determine how we spend our money,' Professor Lust said. 'We do, however, have a Board of Trustees on which there are several State Ministers.

'The work of the Society covers a wide range of disciplines — from astronomy to physics, from medicine to biology, from international law to history and the arts.

Guest scientists

'If someone wants to come and work with us on a guest status, he has to apply and tell us what he wants to do. If it fits in with our programme, he will be given a fellowship or grant to enable him to carry out his research. About 800 of our guest scientists come from outside Germany, some of them from Australia.

'And in saying this, you need to keep in mind the way the Society was originally set up — and that was to have a place where the physical scientists could do work that was not so easily done in the universities. When an outstanding scientist came along we wanted to have a way he could be employed solely to do his research without having to go to a university where at the same time he would have to accept teaching responsibilities.

'Most of our directors though, do in fact have part-time positions at the universities. For instance, in my own case, I work in the astrophysics section at the University of Munich.'

Appointment

Dr J. Kowalczewski will be the acting Chief of the Division of Mechanical Engineering following the appointment of Mr Roger Morse as Director of the Solar Energy Studies Unit.

CHAIRMAN PRAISES WORK OF BENEVOLENT FUNDS

More than 4500 members of staff (about 68 per cent) are now contributing to the four CSIRO Benevolent Funds, a practical expression of the social conscience of those who work for the Organization and their thoughtfulness for their colleagues who might at some time be involved in accidents or meet with other unforseen misfortune.

Mention of this high contribution rate and the feelings behind the membership was made by the Chairman, Dr J. R. Price, when he spoke at the recent fifth annual general meeting of the Southern Fund in Melbourne.

'We are living in a society where there are available a wide variety of means of insurance by which people can protect themselves financially from the unexpected,' he said. 'But despite this, there are still many circumstances in which the rules and practices necessary in any society do not embrace all the possibilities and such extraordinary circumstances pose very serious problems for the individuals concerned.

'It is therefore desirable that society finds other means of helping its fellows who are caught in these circumstances and this is just what the Benevolent Funds set out to do.'

'The existence of these funds, the support of them and their management are all wholly admirable and I can do no more than thank all of you who are concerned with them and their administration.'

Because he had been asked to discuss some of the wider aspects of CSIRO's concern with the problems of people, Dr Price outlined two of the newer ideas on research which were being undertaken by the Organization. These included the South Coast Survey and the study of remote communities in the northern regions of the country.

The South Coast Survey, he said, was using the standard methods which had been pioneered many years ago coupled with new techniques which took into account the human factor.

'People and their requirements are regarded as an essential feature of the study, as well as the need for utilising the resources and for the conservation of the environment.'

In the remote communities study, the Organization was embarking on 'an almost uncharted sea as far as CSIRO is concerned'. In this programme, Mt Isa, Katherine, Kununurra, Mt Newman and Dampier have been put under the microscope in a survey of human adaptation to Australia's somewhat difficult northern environment.

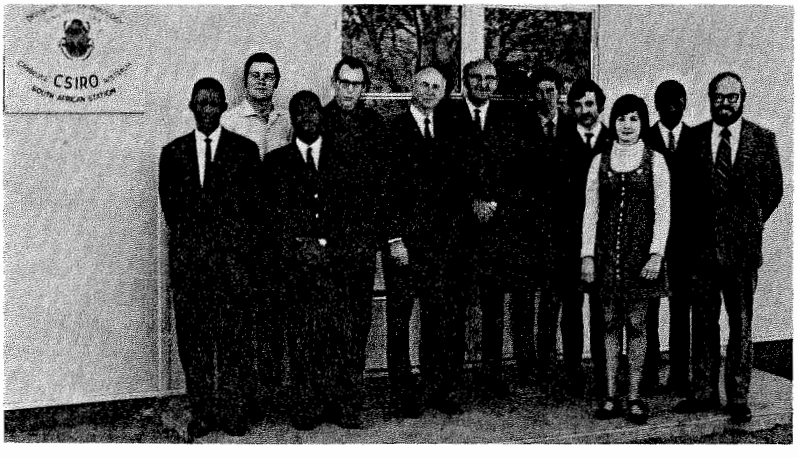
'The purpose of the study,' Dr Price said, 'is to acquaint the public, including local authorities and industry executives, with the problems of living in remote areas as these appear to the ordinary citizen.

Deni scientist awarded US degree

An interest in the behaviour of grazing animals in semi-arid environments in Australia recently led to Victor Squires of the Rangelands Research Group at Deniliquin taking a look at what is happening in similar environments in the United States. While there he completed a PhD programme at Utah State University.

During his travels he visited many research centres and participated in the International Symposium on Useful Wildland Shrubs at Logan, Utah. He also presented papers at the Water-Animals Relations Symposium at Twin Falls, Idaho, and carried out a short course on 35 mm photography at Billings, Montana.

From July to October Vic was on a special assignment in Tehran, Iran, where he completed a range survey in the Karadj Dam catchment. This was at the invitation of an international firm of consultants.



The Dung Beetle Unit's South African station in Pretoria has been playing host to a number of visitors recently, including their Chief of the Division of Entomology, Dr D. F. Waterhouse, Dr M. A. S. Jones, the Executive Officer of the Australian Meat Research Committee, and Dr Angus Macqueen of the Division's Long Pocket Laboratories, who joined the Division recently.

During the time Dr Waterhouse was there he gave a cocktail party to commemorate the completion of a laboratory building which has been built by CSIRO from Australian Meat Research Committee funds.

This picture, taken during the function, has just reached us from Pretoria. From left: Hartmut Aschenborn, a university vacation student, Geoff Tribe, Frans Malebye, Adrian Davis, Dr G. F. Bornemissza, Ian Temby, William Molapo, Michael Mokotedi, Dr Waterhouse, Karen Paschalidis and Dr Macqueen, who was on his way to Australia to join the Dung Beetle Unit in Brisbane, Queensland.

Dr Bornemissza, Officer-in-Charge of the station, is one of the recipients of the 1973 Encyclopaedia Britannica awards.

Max Bourke leaves Minister's staff

Mr Max Bourke who has been science liaison officer to the Minister for Science, Mr W. L. Morrison, for the past 12 months, has resigned from CSIRO to take up a position as Director of Community and Media Services for the Department of Urban and Regional Development in Canberra.

Max, a former editor of 'Coresearch', will be involved in press liaison and public relations for the Department as well as moving into the area of research and intelligence field work where officers will be sent out into the field to discuss the Department's programmes and needs.

He will take up his duties next month after his return from an overseas trip. This is mainly for pleasure and Max will be skiing in Norway, but while he is away he will take advantage of the opportunity to visit Europe to see the ways other authorities handle environment and urban information services.

Max has been replaced on the Minister's staff by Mr Terry Healy who is on secondment for 12 months from the patents, licences and contracts group of Head Office. Terry, who already holds a degree in science, passed his finals for his law degree at the Australian National University at the end of 1973 and earlier in the year was registered as a patent attorney.

'Keep your roof on' says Building Research

Pursuing a vigorous policy of communicating research findings to the building industries, the Division of Building Research at Highett has in the past two years organised a number of well attended seminars, the latest of which was entitled 'Keep your roof on', dealing with wind damage to domestic and other constructions in Victoria.

Booked to capacity, the seminar was a highly successful affair, particularly in the free-ranging panel discussion which concluded it.

Those attending included 23 builders, 9 engineers, or architects, 32 representatives of manufacturers of building materials, 16 people from various educational institutions and 10 local government officers.

Honour

The degree of Doctor of Philosophy has been conferred upon Dr J. J. Mott of the Division of Tropical Agronomy from the University of Western Australia. His thesis was entitled 'The Autecology of annuls in an arid region of Western Australia'.

Scientists' work will help New Hebrides

A Royal Society expedition to the New Hebrides made in 1971 could have far-reaching results for the people of those islands if the plans of Dr Ken Lee of the Division of Soils, Adelaide, come off.

Ken was the leader of the expedition which included 26 scientists from nine different countries, including Russia. Their interests ranged from soil zoology to forestry, from biology to botany and until they descended on the New Hebrides, knowledge of the distribution of plants and animals of the islands that make up the condominium was very largely a blank.

Ken is now busy organising a conference for later this year in London at which those who took part in the expedition will meet to discuss the results of their work. He expects that anything up to 100 papers will be written on material collected by the expedition. Summarised papers presented at the conference in London will be published by the Royal Society.

Dr Ken Lee

'This should give the authorities in the New Hebrides access to all the information we have on their country,' Ken said. 'The Society has also provided the money for a small herbarium to be set up in Vila by the Department of Agriculture and a collection of plants from the expedition has been established there.'

Ken is also hoping to encourage members of the expedition to write a book on biology of the country for use in the islands' schools. 'The students badly need such literature on their own region and the British Administration has said they are very keen to see this work completed.'

Ken's interest in the Pacific Islands stems from the time of his arrival in 1965 in Adelaide to join the Division. In New Zealand, his home country, he had built up a reputation as a soil zoologist and had become an authority on earthworms there. He had by then also published his first book on the subject, 'The Earthworms of New Zealand' for which he was awarded his D.Sc.

Ken came across the Tasman to start the soil zoology section of the Division, and found that his chosen discipline was almost unknown in this country. He had only just begun his work for CSIRO, however, when he was asked to join a Royal Society expedition to the Solomons to work on earthworms, soil fauna and pedology.

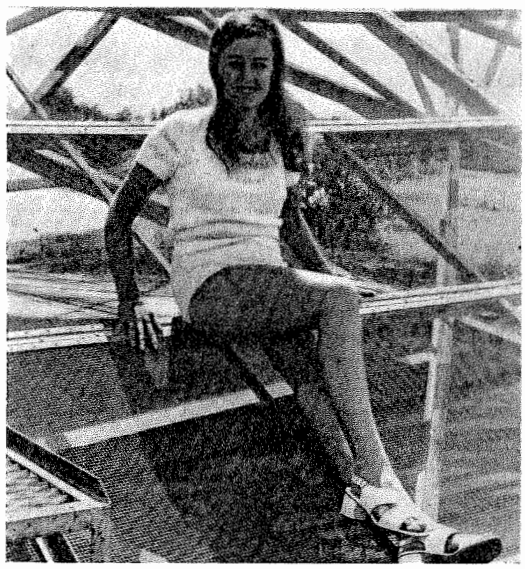
Deserting, as he put it, his wife, family and the Division almost immediately, Ken took off with the blessing of the Organization, for the islands. Like the New Hebrides were to prove a few years later, the Solomons turned out to be 'pretty rugged'.

'Sometimes we would be landed by boat on the shore of an island and left to our own devices for up to a month,' Ken said. 'We learned what it was like to camp in the jungle, trek miles over high mountains and exist in rainfall that on one occasion reached a peak of 112 inches in nine days.'

When he returned to Adelaide, Ken set about establishing the soil zoology section and began his collaboration with an English scientist, Dr Tom Wood, on the association between termites and the soil. This work resulted in another book 'Termites and Soil, and numerous papers being published.

Currently he is working on the effects of termites on decomposition of organic matter in soils and their effects on soil profile formation and plans to set up a small unit in Townsville which will be specifically interested in the effects of soil animals on organic matter decomposition in tropical soils.

There's a dish at Parkes...



Above: Lyn Newton, one of the brightest stars occasionally observed at Parkes when she comes across from the Division of Radiophysics in Sydney where she is one of the computing team.

Below: Mr. Michael Forbes, deputy editor of the 'Christchurch Star', Mr Frank Neate, 'Greymouth Evening Star', and Mr Gordon Stepto, public affairs officer for Air New Zealand in Sydney, take a look at a moon model in the visitors' centre.

The Parkes 210 ft radio telescope is attracting about 80,000 visitors a year, many of whom come from overseas. Among those who recently signed the visitors' book was a group of New Zealand journalists. Les Fellows welcomed them on behalf of the Officer-in-Charge, Mr John Shimmins, and explained the display centre to them and Mr Frank Trett then took the men on a tour of the telescope.

The journalists expressed interest in the work that was being carried out at the time by Dr F. Gardner and Dr J. Whiteoak who were looking for formaldehyde absorption in the galaxy N G C 4945 and Dr Whiteoak took time out to describe the observations.

Discussing the operations side of the telescope, the men were surprised to learn that visiting astronomers from overseas were allowed time on it for observations without having to pay for the service.

They were given an outline of the role the Parkes telescope played in the Apollo moon missions and the way it is making a significant contribution to major themes of modern astrophysics, including the life cycle of stars, the study of the Milky Way galaxy and the radio study of galactic chemistry.

Dairy Research man's work recognised

Back in 1962, Mr Joe Czulak of the Dairy Research Laboratory of the Division of Food Research, Highett, was asked to help solve the problem of making cheese from buffalo milk in India. Joe took off for that country under Colombo Plan arrangements and after comprehensive investigation developed methods for the manufacture of Cheddar and Gouda type cheeses.

The Indians wanted to express their gratitude for his efforts and the University of Sadar Patel in Gujarat State decided to award him an honorary degree of Doctor of Science. Joe flew to India last month to receive the award which was presented to him on 15 December.

CSIRO staff on Adelaide railway station ready to go to Victor Harbor by a train hauled by the Mountain Type Engine 520, the biggest and heaviest steam locomotive still operating in Australia. Left to right: David Eddy, translator; Trevor Lawson, clerical assistant; Christine Dighton, clerical assistant; John Dighton, technical assistant; Ros Bott, clerical assistant; Hugh Holloway, senior clerk; Bernie Foster, storeman. All are from the Division of Soils except for Ros Bott who is from the Division of Mathematical Statistics.

Adelaide Divisions back historical railway plan

An old T class locomotive will puff again along 12 miles of railway line — unused for nearly 18 years — if some of the staff of the Division of Soils in Adelaide have any say in things.

They are taking part in a campaign to restore the old piece of narrow gauge track linking Quorm and Woolshed Flat through the Pichi Richi Pass in the Flinders Ranges. Giving them additional support is a small number of enthusiasts from the nearby Division of Mathematical Statistics.

Members of the Pichi Richi Society include translator Dave Eddy and Trevor Lawson from Transport Section of Soils, both of whom also take a close interest in the affairs of the South Australian Branch of the Australian Railway Historical Society.

'To pay the cost of the old locomotive, T No 228, we've bought, restore its boiler and fix up the line we need at least $10,000,' the men said. 'We've already had assistance from people outside the State and if there are any other railways enthusiasts within CSIRO who are interested in this project, we'd be delighted to hear from them.'

The plan to restore the Pichi Richi line evolved after the South Australian Railways announced that for economic reasons no more steam trains would be allowed to run on State lines, even for pleasure trips, after 1975.

The ARHS normally runs about 30 trips a year between the months of March and October (none are allowed during the summer months because of the danger of fires) and faced with the prospect of owning four old locomotives but with no lines to run them on, a number of enthusiasts gathered together and decided to work on the Pichi Richi idea. Naturally enough, they have the backing of the ARHS.

Members of the Adelaide Divisions frequently take part in the trips organised by the Australian Railway Historical Society, one of the latest being on the 60 mile track to Victor Harbor. All are hopeful that the Pichi Richi venture will be a successful one so that they continue their regular outings.

Ted Trickett has MIA in flat spin

There has been an outbreak of spinning in the Murrumbidgee Irrigation Area. And only one man can really be held responsible for this—Mr Ted Trickett of the Division of Irrigation Research.

Around the Division, Ted's bearded face, quicksilver mind and enjoyment he gets from occasionally wielding a wooden spoon are well known. But now he, his wife Theodora, and schoolboy sons, Mark and John, are being equally recognised beyond the confines of CSIRO and their home for their prowess at the spinning wheel.

It all started when Ted, a measurements engineer, became involved with the measurements of fibres, which, he said, was a natural corollary to his professional work.

'I wanted to know more about fibres and I'd become intrigued with textile physics and their problems of objective measurement. I felt the only way to get a real appreciation of fibre and its fineness was to start handling yarns myself,' Ted told 'Coresearch'.

'To do this I started spinning wool and before long had my family interested in it too.'

Ted started talking to people in the area, particularly to farmers. It was in the early '70s and there was not much joy in the wool industry and Ted found that the producers were more concerned with the business of getting the wool off the sheep's back, into a bale and collecting the cheque than they were in being concerned about the quality.

'Few seemed to have much first-hand knowledge of wool classing. We did a lot of talking and arguing and I learned a lot from them. But it seemed to me there was a great communication gap between the farmers and the end product of the business, the textile trade.'

Ted felt that if he could get the farmers to give more consideration to the quality of their wool, they might get better returns. His mind, ever chasing off into the distance, saw women — and possibly their farmer husbands — all over the countryside spinning. He took a wheel along to the next local show and started demonstrating what he was getting at.

'And the women, and some of the men, were interested in what we were saying,' Ted added.

Before long the Tricketts found they were being asked to demonstrate spinning to many different groups, which led to a demand for spinning wheels. Ted started importing them in kitset models from a New Zealand firm and while these proved satisfactory in many respects, he felt that a steel one might be better for Riverina conditions.

He bought a couple of bicycle wheels and began production of a new type of wheel. 'They've proved fine for spinning wool,' he said, 'but I think the women prefer the look of the wooden ones.'

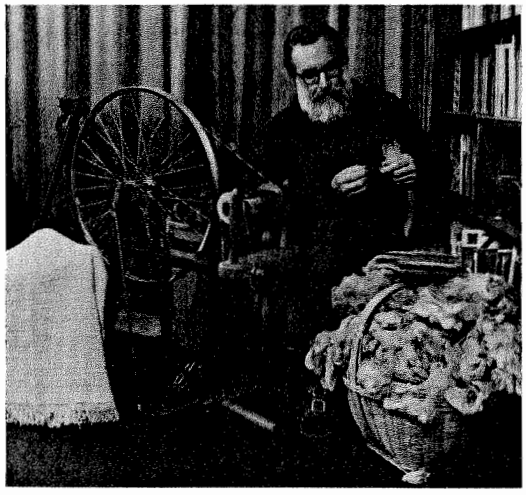
A primary school in Griffith became interested in having the children take up handcrafts and Ms Trickett was asked to give several hours a week to showing the girls how to spin their own wool and then knit it up.

In the same way, the Trickett boys think nothing of travelling long distances to give demonstrations and have even used a charter aircraft to reach a town 400 miles from Griffith, while the family often travels up to 200 miles away.

Having satisfied himself about many of the qualities of wool, Ted has turned to the measurement and spinning of other fibres. He has tried synthetics and wool and synthetic mixtures. He has now acquired some alpaca which he hopes to be able to spin and he has been successful with mohair.

'Now I'd like to try spinning quivat hair. This comes from the muskox, a northern Canadian animal which has shaggy hair that is worth $C25 an ounce. I'm told four ounces is enough to make a woman's dress.'

Never wanting to leave a stone unturned, Ted has even tried spinning human hair. 'Did you know,' he said, 'that the Negro is the equivalent of the merino when it comes to the crimp basis of measurement?'



Ted Trickett spins wool on one of his home-made spinning wheels.

New D.Sc.

Dr Peter Wailes, Division of Applied Chemistry, Melbourne, has been awarded the degree of Doctor of Science from the University of Sydney. The award follows his published work entitled 'The organometallic chemistry of titanium and zirconium'.

— Courtesy 'Punch'

'Hate to admit it, but I don't think we've a better expression in Arabic than having 'em over a barrel'.

Brazilian project ends for NSL officer

Mr Edmund Layton in the Applied Mechanics Section of the Division of Applied Physics is back at his desk after four and a half years in Brazil. During that time he was on leave without pay from CSIRO and worked as a United Nations Industrial Development Organisation (UNIDO) standards engineer and technical assistance adviser to the Brazilian Federal Government.

In Rio de Janeiro attached to the Brazilian National Institute of Weights and Measures, Mr Layton developed the project idea of a Brazilian National Standards Laboratory and Applied Metrology and Industrial Services Laboratories to the stage of submitting feasibility studies and complete project proposals. These were accepted by the Brazilian Government and submitted for a large scale, long term project to the United Nations Development Programme (UNDP) Governing Council for approval.

The project, which was later approved, will provide the government with the necessary metrological infrastructure to serve the technological and scientific measuring needs of commerce, industry, agriculture, education, public health and safety as well as technological and scientific research.

When Mr Layton completed his work on the programme as its project manager, he undertook work as a consultant for a number of other government departments and instrumentalities.

During his stay in Latin America he presented a number of papers to various organisations, the main ones being his contribution to the UNIDO Training Workshop for Personnel engaged in standardisation held in Santiago in Chile in 1971 and to the Organisation of American States (OAS) Marketing Course held in Rio de Janiero in 1970.

Medical research

Cont'd from page 1

Desirable changes

'It is clear', Professor Fenner said, 'that the boundaries of "medical research" are so imprecise and the work of CSIRO so comprehensive that there is a great deal of work going on in CSIRO laboratories that is relevant to human health.'

Community attitudes to the word 'health', he added, were changing with the increased emphasis to be found on the quality of life and for this reason the distinctions between what was a proper concern for CSIRO scientists and for medical research workers had become increasingly blurred.

Listing some of the changes which might be desirable, Professor Fenner said that because the former 'boundaries' of medical research might now be altering, he felt it might be appropriate for the Executive to review its policy in this field. 'In the past that policy may have inhibited some research workers from making contributions which they believed could affect human health.'

Better communication and better collaboration between CSIRO scientists and those in other organisations engaged in medical research might be facilitated by the establishment of a small committee representing CSIRO and major medical research organisations in Australia.

This might pave the way for the development by medical research workers of discoveries made by CSIRO scientists. It could also promote access of medical research workers to CSIRO expertise in basic science.

Professor Fenner added that he felt a strong case could be made for the setting up of a Division of Human Nutrition. There was no effective research organisation in Australia that was primarily concerned with nutrition, he said, and the subject was 'gravely neglected' in medical schools and research institutions. Much of the work of the agricultural and biological Divisions of CSIRO and all of the work of the Division of Food Research was involved with human foods, but stopped short of considerations of health aspects of food.

Executive decisions

During the last few weeks the Executive has given further consideration to this whole matter and has now formally proposed the setting up of a CSIRO Medical Research Liaison Committee. When the Committee is set up, one of the first matters for consideration will be a review of CSIRO's policy in relation to medical research.

The Executive will also consider the establishment of a Division of Nutrition (not necessarily concerned solely with 'human nutrition'). A formal proposal will be prepared by the Agricultural and Biological Sciences programme committee on which the Executive's decision to create the new Division will be based.

Printed by CSIRO, Melbourne

Letters to the Editor

Solar energy

Sir—

We in the Centre have long been aware of solar radiation and welcomed Roger Morse's timely article on solar energy research. However, we could not coolly accept his claim that because our annual insolation is only 40 per cent above that of Melbourne, we had little to offer. I think it relevant to point out that during July insolation at Alice Springs is 2.3 times that in Melbourne. Unless energy is to be stored from season to season, this difference is surely relevant. When energy becomes more expensive, maybe Melbournians will see the light and move a little nearer the Centre.

—Max Ross, Alice Springs.

Aboriginals

Sir—

I was very pleased to read in Coresearch No 174 that three young Aboriginal students will be trained as technical assistants by the Division of Wildlife Research. One disadvantaged group being assisted! But then I find that it is taken for granted that these three students will be men. Why?

It is envisaged that the students will eventually be qualified to take employment with CSIRO or the National Parks and Wildlife Service. Both organisations now appoint women to almost all positions. Aboriginal women are doubly disadvantaged, so why not consider them for this training?

—K. R. Makinson,
Division of Textile Physics.

Dr Humphrey gets UNESCO position

Dr George Humphrey, Officer-in-Charge of CSIRO's Marine Biochemistry Unit, has been elected Chairman of UNESCO's Intergovernmental Oceanographic Commission. The Commission is the world body responsible for co-ordinating international oceanographic research.

Established in 1960 for scientific investigation of the nature of the oceans and their resources through the concerted actions of member countries, the IOC acts as a world data centre for the collection, correlation and exchange of international oceanographic data. It is also concerned with the co-ordination and sponsoring of oceanographic training and is interested in monitoring pollution.

Dr Humphrey is an internationally recognised marine scientist. For a time he was Chief of the Division of Fisheries and Oceanography and is a member of several international oceanographic bodies.

(Details of Dr Humphrey's interests in oceanographic research were contained in an article in last month's issue of Coresearch.)

'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.
Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478.

coresearch 177

Produced by the Central Communication Unit for circulation among members of CSIRO staff

February 1974

New milk substitute for sick babies ready for market soon

A new product will appear on the shelves of pharmacies throughout Australia within the next few weeks — a carbohydrate-free food for babies and infants suffering from gastro enteritis and other conditions which prevent them from drinking milk.

The product, known simply as CF1, will be manufactured by The Nestle Co (Aust) Ltd but much of the credit for its development goes to two CSIRO scientists, Dr Alex Buchanan and Ms Jane Markotsis, both of the Dairy Research Laboratory of the Division of Food Research, Highett.

The launching of CF1 will see the completion of a three-year project which was undertaken by the Division at the request of the Royal Children's Hospital in Melbourne.

'At the time they were having problems with supplies of the American carbohydrate-free food they were using for children suffering from such complaints,' Jane told 'Coresearch'.

'If there was a sudden influx of patients and supplies were short, more cans had to be flown in from the States. Air freighted, they cost about $2 each and with a lot of babies needing the food, it became an expensive item.'

Australian product

An approach was made to the Division to see if it could come up with an Australian-made substitute. Jane (who continues to write her papers under her maiden name of Henderson) had just arrived at that time from Massey University in New Zealand to work for the Division as a food technologist and was asked to work with Alex on the project. For the next few months their efforts were concentrated in this direction.

'We found there were a number of babies and children who were unable to thrive on milk either permanently or temporarily,' Jane said. 'This could be due to several causes and in some cases the problem could be overcome by the use of either a processed form of milk or milk from a different source, such as a goat. But more commonly the intolerance was due to lactose, the sugar in milk.

'To provide a food for such children we decided to take our ordinary cow's milk, break it down into separate ingredients and then recombine its proteins and milk fats in the form of an easily digestible liquid which would replace ordinary milk,' Jane said.

After many laboratory tests, the scientists, in collaboration with Nestle's technical staff, came up with a product which met the high standard required and to make it even more satisfactory as a food, vitamins and minerals were added.

'But because CF1, the name chosen for the product by Nestle, is free of carbohydrates, it requires the addition of some form of that substance other than lactose to make it a truly useful food,' Jane said. 'Which form is used depends on the clinical nature of the child's intolerance but glucose is the most common additive. Medical advice can determine this factor.'

CF1 has been prepared in the form of a concentrated liquid which, to look at, resembles a paler shade of conventional evaporated milk. To prepare it, all a mother at home or a nurse in the hospital has to do is to add boiled water and the prescribed amount of a suitable carbohydrate. It is packaged in 383 ml (13½ fl oz) cans and one can will make up into about three and a half cups of milk substitute.

Costs

In comparison with the American product, CF1 will retail initially at 66 cents a can but if it is eventually placed on the pharmaceutical prescription list it will come down to about 12 cents a can.

Talking about the problems of feeding babies suffering from gastro enteritis, Jane said it was a disease which could be very serious for infants because it could lead to dehydration. It was essential to give babies plenty of liquids and if they could not tolerate milk, about the only thing they could take was boiled water. 'And there's no nutrition in that,' she said.

Most children who were fed on CF1 would eventually be able to transfer back to ordinary milk once their condition improved, she said, but in a small number of cases where a child had a condition which would always prevent him from drinking milk, the new product could be used indefinitely. As yet, however, Nestle have made no trials on adults and are not yet willing to commit themselves on how long the product would be useful for older people.

Jane Markotsis

Although CF1 is a new commercial product, it has been in use for some time in clinical trials which were organised in selected hospitals across the country in association with gastroenterologists and paediatricians.

Nestle, however, have already had requests from New Zealand, Kuala Lumpur and the United Kingdom but in the main these have come from doctors who at some time were involved in the clinical trials.

And the Division has been inundated with requests for the product, Jane said.

'One urgent call came from the Auckland hospital,' she said, 'and since I was going over to New Zealand on leave I undertook to deliver the supplies personally. I saw the sick child, too, and it was quite an experience to see the way research that you've been personally involved in is applied in a practical way.'

Four Divisions to form new animal laboratories

Four more Divisions, this time those engaged in animal research, have been grouped together to form the CSIRO Animal Research Laboratories.

The Divisions involved are Animal Genetics (Ryde, NSW), Animal Health (Parkville, Vic), Animal Physiology (Prospect, NSW), and Nutritional Biochemistry (Adelaide, SA).

A committee comprising the Chiefs of the Divisions will coordinate the work of the Laboratories. Their Chairman will be Dr K. A. Ferguson, Assistant Chief of Animal Physiology, who has been appointed to the position for a seven-year term.

Dr Ferguson, who is internationally known for his work on animal physiology, particularly the effect of nutrition and hormones on wool growth, was leader of the team which developed a practical method of increasing wool growth by treating feed with formalin to preserve its dietary protein from breakdown in the animal's rumen.

His Division is also engaged in some promising research on chemical defleecing of sheep.

New Chief

Dr W. G. Crewther, Assistant Chief of the Division of Protein Chemistry, and widely known in the field of biochemistry, has been appointed as Chief of the Division. Dr Crewther has been acting in this position since Dr F. G. Lennox left for ASLO last year.

Echidna specialist sets up displays for zoo and museum

Roy Coles (left) and Dr Mervyn Griffiths weigh an echidna during a field trip.—Picture: Ed Slater.

Taronga Park Zoo in Sydney and the education section of the National Museum in Melbourne are to have permanent exhibitions detailing the life cycle of one of Australia's strange mammals, the echidna or spiny ant-eater. The material for these has been provided by Dr Mervyn Griffiths of the Division of Wildlife Research in Canberra and the pictures which will go on display with them are the work of the Division's photographer, Ed Slater.

Interest in the echidna has been stimulated by Merv's work on the animal and in particular by the Division's recent good fortune in finding in the bush an echidna which had an egg in her pouch. She incubated the egg in the pouch and nine days later a baby was hatched. This has been successfully reared by its mother which has been cared for by Roy Coles, a technical officer in the Division.

On previous occasions the Division has taken echidnas which laid eggs and hatched them—the incubation time was about 10½ days—but the young did not survive. Their recent triumph has allowed them to observe the hatching process again and this time to measure the rate of growth of the pouch young.

Merv's interest in echidnas goes back many years and started when he realised how little is known about them. Two genera of echidnas exist —one the short-beaked echidna, *Tachyglossus*, found in Australia and in some parts of Papua New Guinea and the other, a long-beaked echidna, *Zaglossus*, which is found only in the dense mountain forests of Papua New Guinea and Irian Jaya at an altitude of about 7000 to 9000 ft.

As well as echidnas, Australia has another monotreme —the platypus. Both these animals are of great interest to scientists studying the evolution of mammals because they have both reptilian and mammalian characteristics. The echidna, for instance, lays an egg with a rubbery skin similar to that of a reptile's egg but once this has hatched the young one is reared in a pouch where it lives on milk in a mammalian style.

The milk is secreted by mammary glands identical to those of marsupials but unlike the marsupial, the monotreme sucks its milk from special patches of skin in the pouch, not from teats.

With the recent successful rearing of a pouch young the staff were able to measure the rate of growth of the baby by removing it at regular intervals from the pouch and because it is not attached to a teat this does not unduly disturb the mother or the young one.

Cont'd on page 4

Math. Stats. settles the arguments: — they sift fact from co-incidence

If a lottery number is withdrawn from a barrel to win a $10 prize, and is then returned to the barrel, what are the chances that it will be drawn out to win a $5 prize?

How many times would the barrel have to be turned to be sure that the number had been so mixed in with the other marbles that its chances of being drawn out a second time were now no greater than they were originally?

Don't be quick to say that given a reasonable shaking the chances are about the same as they were originally, because the Division of Mathematical Statistics investigated just this question for an Australian lottery firm and came up with the rather staggering odds of a billion billion to one that the excessive number of double prize wins were not due to chance alone — the barrel wasn't rolled enough.

The Division recommended as a simple solution that once the marble had won a prize, it should be left out of future draws and the owner should be content with having won one prize.

Not every mathematical problem the Division is asked to solve is as clear cut as that, but throughout the country members of its staff — just slightly less than 100 — are involved in supporting CSIRO's scientists when they come up against a complex mathematical or statistical situation. The Divisions are given first priority, but if there is time to spare, the staff is prepared to help outside organisations and institutions as well as industry.

In-training

Headquarters for the Division has been for many years in Adelaide, but will be located in Canberra later this year. Many of the staff are resident in other capital cities or at country centres, occasionally returning to headquarters to keep up with new developments in techniques and with new mathematical approaches.

In-training seminars are held at the headquarters and occasionally workshops are arranged in places where staff are on location, again to keep them up to date in the highly intricate world in which they sift fact from coincidence with the aid of figures and computers.

Largely individualistic in their outlook, many of the scientific staff are people with first degrees in another discipline such as chemistry, physics or engineering. Later they have specialised in statistics or data analysis, perhaps because they have had to learn how to solve their own difficult problems.

With additional experience and training in consultation they have developed an interest in applying techniques to other people's work and such situations present themselves as a challenge to their analytical minds.

'Although much of the research stems from problems in the discipline itself, many research problems arise from practical situations. Sometimes in trying to find solutions — some of which at first sight seem impossible — the Math. Stats. staff become engaged in research on basic issues,' their acting Chief, Dr Geoff Hill said.

With a responsibility to help with precise thought and quantified techniques which lead to discoveries, the Division is charged with three objectives:

- Research in mathematics and statistics relevant to the work of the organisation;
- Providing a consulting service dispersed throughout the organisation with high initiative in pressing the role of mathematics and statistics in research;
- Having a close working relationship with the Division of Computing Research.

In operating as consultants, the staff have found that often all that is needed is for someone with a mathematics and statistics background to discuss a problem with the scientist concerned.

Cluttered up

'Because of his training in formal inference and quantified methods, the consultant can often suggest new avenues of thought. Occasionally the scientist realises he actually had the solution all the time but had not recognised it among the clutter of data he already had,' Dr. Hill said.

On other occasions it's a matter of pointing out to an enthusiast who wants to 'publish or perish' that his conclusions will not stand the statistical tests against mere coincidence until more work is done. The element of chance has to be eliminated to reach a sound conclusion.

'In other circumstances, scientists may be weighed down by the sheer mass of data,' Dr Hill said. 'They appreciate that some of it will eventually be useless but until they know what is relevant and valuable they don't want to lose any of it. We can be of use there by showing him how his information can be tested, filtered and stored for later retrieval. Often in the process of doing this, a mathematical pattern emerges which will give him a breakthrough.'

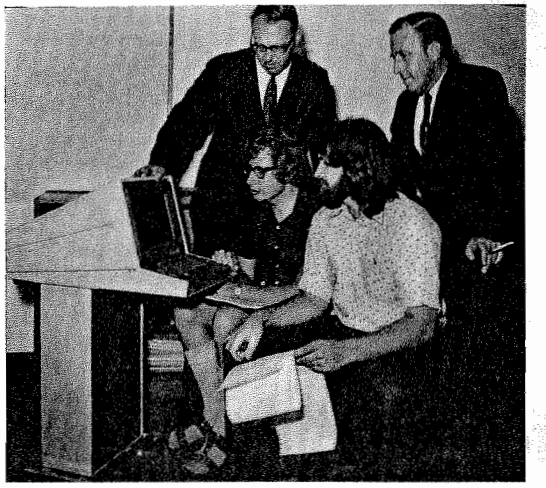
Just how women's libbers would react to the Division is a bit difficult to judge — the statistician's concern for inference, induction and insight extends somewhat wistfully to what is known as 'feminine intuition'.

'Occasionally,' admitted Dr Hill, 'our people get buried under a veritable mountain of data, despite all the computerised help and mathematical knowledge they may possess. That's when you might call in a woman to look at the problem carefully, then come up with a totally non-logical or intuitive idea about it. And quite often it works because the statistician has been excessively concerned with rigour. More often it doesn't work, but if you could predictably harness intuition with rigorous inference you would have the greatest research aid since computers.'

Anyone who thinks that working as a backroom boy in mathematics would be the unexciting end of the science spectrum is wrong, if the staff at the Division in Adelaide are the criteria.

Professor J. Gani who will become the new Chief of the Division of Mathematical Statistics.

They have come up with many interesting research projects which have ranged from an analysis of data in Australia which led to the first conclusive evidence that fluoride additives did help the teeth of schoolchildren. They have made analyses of State health records, of schoolchildren, servicemen and people suffering from anxiety problems. They have analysed measurements on whales and even given the Victorian bookies statistical analysis of the advantages and disadvantages of having place betting.



Robin Lamacraft (left, seated) and Chris Brien demonstrate to Dr G. N. Lance, Chief of the Division of Computing Research and Dr G. Hill, acting Chief of Math.Stats., statistical processing by the 'Statscript' system on the graphical display terminal.

New Rangelands publication

A new Range Assessment Newsletter is to make its appearance early this year and will be distributed to those interested in this field in Australia.

Initially, the newsletter will be produced twice a year with the specific aim of keeping workers fully informed of the latest developments in range assessment in Australia.

The responsibility for its production is mainly in the hands of a working committee which comprises two members from the Rangelands Research Group, Graeme Tupper (Deniliquin) and Colin Lendon (Alice Springs) and representatives from the Soil Conservation Service of New South Wales.

The newsletter, one of the outcomes of the last Range Condition Workshop held in September, will contain details of range condition techniques prepared by participants at the workshop, news of current activities and proposals for future workshops and information concerning the forthcoming US-Australian workshop on range assessment set down for March-April at Alice Springs. The possible formation of a Society of Range Management in Australia will also be aired.

Noted physicist dies in USA

Mr William Swinbank, a noted Australian atmospheric physicist and a former Assistant Chief of the Division of Atmospheric Physics, has died in Boulder, Colorado, USA.

Mr Swinbank was a graduate of the University of Durham and joined the British Meteorological Office in 1938. He came to Melbourne in 1947 to help with the establishment of what was then the Section of Meteorological Physics, later to become the Division of Atmospheric Physics. Mr Swinbank then played a considerable role in both its research and management.

His most notable contribution to the work of the Division was in the fields of micrometeorology, radiation and ozone. He was a world authority on atmospheric turbulence and with his associates in the Division was distinguished for pioneering the development of the direct measurement of turbulent fluxes of moisture, heat and momentum from the surface of the earth into the atmosphere.

On the basis of these and other achievements he was elected a Fellow of the Australian Academy of Science in 1970. He was a former Chairman of the Victorian Branch of the Australian Institute of Physics, and in conjunction with Dr A. J. Dyer, was awarded the Buchan Prize of the Royal Meteorological Society in 1968.

Mr Swinbank resigned from CSIRO in 1971. At the time of his death he was working at the National Center for Atmospheric Research in Boulder, Colorado, as Director of the US National Hail Research Experiment.

Mr Swinbank was a doyen among the world meteorologists, a man of wide interests, sound scientific judgment, and endowed with a first class critical faculty and a keen sense of humour.

LONDON LOG

From time to time Coresearch plans to publish material sent to us from the Australian Scientific Liaison Office in London, under arrangement with Dr F. G. Lennox who recently took up his appointment as Chief Scientific Liaison Officer. In this first contribution, an outline of the work of ASLO is given and in the second, one of the staff makes a visit to the Nature Conservancy's Experimental Station at Monks Wood where many Australian scientists have been made welcome. Look for regular news from London under this heading.

All members of the ASLO staff at 64-78 Kingsway are members of the Australian High Commission in London and this, like other Australian overseas Commissions and Embassies, is the responsibility of our Department of Foreign Affairs. The three Scientific Liaison Officers are seconded from CSIRO for fixed terms and remain on its payroll. Other members of our staff are locally appointed and employed by the High Commission.

ASLO maintains day-to-day contact with Australia House in the Strand, where representatives of various Departments are located, including Defence, Health, Trade, Supply and Treasury, and with Canberra House in Maltravers Street for information relating to Civil Aviation, Customs, Education, Migration, Postmaster-General, the Public Service Board, Taxation and Social Services.

In addition the Chief Scientific Liaison Officer attends monthly meetings called by the High Commissioner or his Deputy with the heads of the various departments for discussion of matters of mutual interest.

Interviewing applicants for scientific positions both with CSIRO and other Australian establishments and seeking information for Head Office and the Divisions, for the Department of Science, and in future probably also for other Departments such as Foreign Affairs, are among our functions.

Other responsibilities are to maintain personal contact with scientists holding CSIRO studentships in the UK and to establish and maintain links with leading scientists in research institutions, universities, government departments and industry in this part of the world.

Attending official functions in London and scientific meetings in the UK and Europe, and maintaining contact with London-based scientific attachés and liaison staff from various countries also occupy our attention.

With the entry of the UK into the European Economic Community centred in Brussels, and Australia's admission to the Organisation for Economic Co-operation and Development with its headquarters and meetings in Paris, the London Office will inevitably become increasingly involved in Europe.

—F.G.L.

Survey

CSIRO and the Australian National University researchers have been making a survey of the effects of the vast annual influx of tourists to the south coast. During the programme an aerial survey of recreation areas was made and tourists were asked to supply information about their recreational habits, facilities and numbers. Data are now being sorted and analysed.

A family affair for Geelong

Peter Dowsett, aged 12, and his brother Ian, 9, are a couple of bright young boys from Geelong. Their dad works for CSIRO — at the Division of Textile Industry.

CSIRO? No, they're not too sure what that's all about but Dad — that's Jim Dowsett — has something to do with making machinery for the Division.

'What sort of machinery?'

'Aw — it's something to do with the workshop.'

'Do you know much about the things the Division does?'

'Not really. Dad doesn't talk much about work at home.'

The boys were just two among two and a half thousand people from Geelong who took advantage of the Division's open day to see what goes on at Textile Industry. In all its 25 years, the premises have only been thrown open to the public on two other similar occasions, but this was an anniversary and therefore something special had to be done.

While the main idea behind the open day was to give the community of Geelong a chance to see some of the research which has gone into CSIRO's efforts to develop new and improved methods and machinery for processing wool and woollen textiles, to develop and improve textile products from wool, to find new uses for wool and to investigate new ways for processing cotton, it was also hoped that families of staff would take the opportunity to see how dads, mums, sons, brothers and sisters helped in that research.

And Jim Dowsett, a laboratory craftsman, and his wife, Jan, decided that the day was going to be educational enough to warrant their two boys having time off from school to see what is virtually a small woollen mill in action.

The boys, of course, wanted to know what Dad was actually doing around the place, where he worked, what was this machinery he made . . .

'Cripes, it's difficult to tell you about it. When a man's been around a place for 18 years it's a bit hard to sort it all out.'

Jim thought about it for a minute or two and decided to start with the machinery he'd been working on which was devised to produce more efficient ways of getting rid of effluent from a mill.

'A lot of people have been working on these ideas,' Jim told Ian and Peter, 'and we've been trying to build a machine that will get rid of the pollutants and grease from the liquid used in the scouring process before the liquid — wool textile wastes — gets discharged.'

For the next five minutes the family had their heads together while Jim explained the process. The boys were impressed. What their Dad was doing seemed pretty important.

But being boys, they had eyes for everything.

'What's that all about, Dad?' Ian wanted to know when his attention was caught by a display featuring aspects of the Division's work on flame retardant materials.

So Jim explained about the research that was going on into producing safer materials to prevent accidents from burns and what this could mean for consumers — even youngsters like themselves.

The boys hadn't realised that the Division's laboratories were set up in much the same way as an ordinary woollen mill might be and it became a chance to see the different processes of handling wool from the fleece stage through to the finished garments. Not to mention the methods involved in the self-twist machinery that has now been patented and manufactured and gone into use in many different countries.

For Peter, who is giving serious consideration to becoming a scientist, the afternoon also gave him an opportunity to look at scientific equipment that was intriguing to a 12-year-old boy. There was high speed photography used to show what happens to fibres during different processes, there was electron microscopy, solar energy studies and laboratories where research goes on to develop shrinkproof and wrinkle resistant processes.

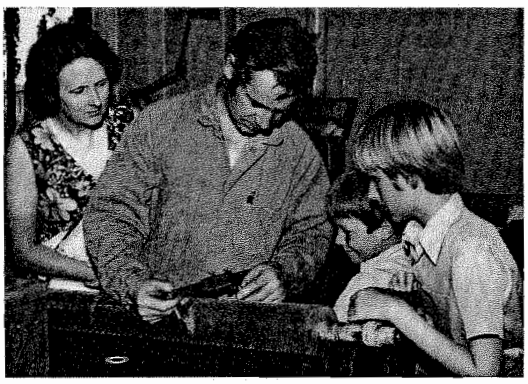
When Jan's feet finally got tired and everyone was feeling the effects of the day's heat and humidity, it was a welcome break to sit down and watch a fashion parade showing the styles predicted for next winter's wool story but after a time small boys begin to fidget at such exhibitions. After all, when you wear school uniforms all through the week, a boy only wants to get into a grubby pair of jeans on Saturday and this sort of stuff is for the birds.

Besides, it seemed the Division had their canteen pretty well organised and there were cold drinks and ice creams to be bought and better things to be done outside the theatrette.

Peter had heard the Division was investigating ways of making rugs for sheep and he wanted to see those. Ian wanted to know why sheep needed rugs anyway and did they have sheep here too? Because, if so, he wanted to see the sheep.

'Come on, Mum, don't sit down. Let's go and see them . . .'

And as the kids said to Jim when they were having their meal that night, it had been a pretty good day. Much better than being at school. 'Why don't they do it more often, Dad?'



Laboratory craftsman, Jim Dowsett, shows his wife, Jan, and sons, Ian and Peter, some of the equipment he works with at Textile Industry. Photo — John Card.

Scientists from the Division of Applied Chemistry who have been working on a research programme at the sewage treatment pilot plant at Lower Plenty, Victoria, have been given a new amenity. The caravan they use is fitted out as a mobile laboratory but has not — until now — run to ablution facilities. Christening their Christmas present is Luis Kolarik while Harry Chin and Norm Pilkington give him some assistance. John Dunn (right) awaits his turn. (Photo: Wendy Folland.)

Animal conference

The Australian Society of Animal Production will hold its tenth biennial conference in Sydney this month. Most of the 200 delegates will be scientists but agricultural extension workers and representatives from suppliers of agricultural machinery, feedstuffs and veterinary drugs will also be taking part.

The Division of Animal Physiology will be closely associated with the conference — the Chief, Dr I. W. McDonald, will give the presidential address, the secretary is Dr N. Mc. Graham, the treasurer is Mr Tom Searle and the conference manager is Ms Audrey Jitts, the Division's information officer.

Hervey Bagot (Mineral Chemistry), Ray Gorringe (Plant Industry), and John Lenaghan (Editorial Services) take a look at the small binding process at the CSIRO printing unit. Printery staffers are Ms A. McCarter and Ms E. M. Webb.

CSIRO editors attend Melbourne colloquium

'A manuscript should be like a good after-dinner joke: clear, concise . . . and clean.'

This was one item of knowledge gained by 20 Divisional editors who attended a three-day editorial colloquium held at the Editorial and Publications Service in Melbourne. The participants were enlightened on many diverse aspects of the publishing game—from how to obtain camera-ready computer output to learning the intricacies of hand composition (watch those mathematical fractions!)

Bob Ingpen, now a free-lance designer and once in the employ of CSIRO, returned to give the editors some metaphysical speculation on the editor's responsibility as a communicator. He challenged them to answer the questions: 'What is truth?' and 'Why print?'.

Perhaps the colloquium didn't fully answer these questions, but it was generally agreed it did teach how to print.

Editor-in-Chief, Basil Walby, detailed the activities and expertise of the Editorial and Publications Service and straightened out problems that had arisen from the introduction of the International System of Units and the new CSIRO Publishing Guide, while editors Bob Schoenfeld and Daryl Boyd explained the requirements of chemical and mathematical manuscripts.

An explanation of the complete printing operation was given by Jack Chamberlain and his staff of the CSIRO printing Unit and an extended tour of the printery was included so that the editors could see the actual operations that transformed their manuscripts into print.

Central Library activities, as they affect Divisional publications, were explained by Peter Dawe, Clyde Garrow, Hil Katz and Jean Conochie.

A visit to a commercial printery showed the editors how a million copies a year of a telephone directory could be printed.

And the participants learned much from each other, too. Formally, from the experiences related by Hervey Bagot, Editor at Mineral Chemistry, Melbourne; informally, across lunches and cups of tea. What was learnt from a long buffet dinner at the Sciences Club, Parkville, transcends brief description.

Nevertheless, it can be said that the Divisional editor discovered that he wasn't, after all, an isolated, freakish entity, taken for granted by all at his Division. Here, he could relax and be reassured through sharing his particular concerns with 19 kindred fellows.

Overall, the symposium fostered the idea of the Divisional editor as a professional, handling his special skills and knowledge to promote the efficient and rapid publication of scientific work.

Deeper knowledge of the skills and problems of the printer, which were gained from friendly interaction with the printers over three days, helped in improving his ability to do this. It also helped the printer himself to feel part of a wider team stretching back to the source of printed words and numbers.

The Division of Animal Physiology, Prospect, has farewelled two of its staff members, one Ralph Chapman (left) who has left for a year's visit to the UK, and the other, Geoffrey Thorburn, who has left the Division to take up an appointment at professorial level in the University of Oxford. He will lead a research group in the Nuffield Institute for Medical Research and the Nuffield Department of Obstetrics and Gynaecology, and will be concerned with factors controlling foetal development and studies in reproductive biology.

Ralph will work for five months with Dr J. A. Swift of Unilever Research, Isleworth, examining changes in wool, hair and skin induced by various potential defleecing agents. He will then spend another five months with Dr P. A. Riley of the University College Hospital Medical School, University of London, working on the inhibitory effects of skin extracts on cell division and multiplication. He has also arranged visits to establishments in the UK, Norway, France, Canada and the US. Since Ralph joined the Division in 1955, he has made notable contributions to scientific knowledge of wool growth and the biochemistry of the wool follicle.

Land Chairman reviews plans for future of three Divisions

By E. G. Hallsworth

Chairman, Land Resources Laboratories.

The creation of the Land Resources Laboratories as a complex of three Divisions with a full time Chairman and three Chiefs represents a new departure in planning land research strategy in CSIRO. The integrated programme of research that the Chairman has to present to the Executive is to be the result of consideration of each Division's individual programmes by the Chairman and Chiefs.

This arrangement will avoid unnecessary duplication and more positively, the Committee will take a broad look at the problems facing Australia in the development of its land resources. These will then be ranked against programmes already under way in the Divisions to determine whether the effort being made in each problem area is appropriate to the need.

This combined approach would be expected to indicate at times areas in which we have no programme or where too little is being done. In effect, it will be a continuing review of priorities so that human and financial resources can be allocated to the most important work.

Our attack on the various projects will be organised largely by the nature of the three Divisions. Although it may be an over-simplified statement, broadly, the Division of Land Use Research will be concerned with resource inventory and analysis; the Division of Soils with the processes and materials that occur within the 'weathered mantle', and the Division of Land Resources Management with discovering those principles which will allow optimum management in areas of defined resources.

It is inevitable that there will be some overlapping and for a time probably areas of activity in each Division that are a continuation of work that was underway before the reorganisation but which may not fit in with the new structure. It will be one of the tasks of the Committee to see that work which is no longer relevant does not persist but at the same time ensure that no valuable project is ended too soon.

Although a pattern of research will develop with time, even now it is possible to fill in, in a broad way, some of the major fields and the links which will be built between the Divisions.

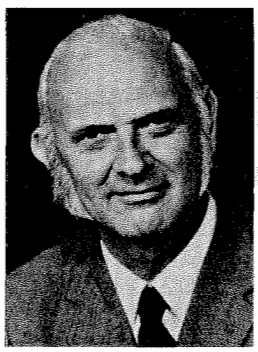
Land Use Research

Land Use Research, while undertaking resource inventory will be concerned with the development of methodologies that will allow this to be done. In some cases this will be in co-operation with other institutions. It will also be concerned with developing new procedures for the survey of the socio-economic needs of Australia's expanding population and the demand for and impact on our land resources.

The teams used for defining land systems in the north and in the territories will be able to bring their skills of photo interpretation of land forms and vegetation to the more densely populated areas where development is required and on occasion to areas where proposed developments may be environmentally undesirable.

Soils

Soils will continue to be largely concerned with material of the weathered mantle and the physical, chemical and biological processes that go on in



Dr Hallsworth

it. Some of these, such as geochemical investigations, which in the early days were largely concerned with trace nutrient deficiencies, now form an essential background to studies on environmental pollution and mineral prospecting.

More weathering studies may be necessary, for instance, to understand how to prevent mining dumps, the new material for soil formation, from becoming environmental hazards.

Biological studies, particularly those involving competition in the rhizosphere (the soil environment in the immediate vicinity of plant roots) and organic matter turnover provide fascinating insights into the limitations in productivity in many areas. Such studies could lead to new principles of management, in forestry and in agricultural and pastoral production, particularly on the lighter lands.

Land Resources Management

This Division will be concerned with discovering and understanding the principles of land management. The work on the Rangelands, at present centred on Deniliquin and Alice Springs, is one major programme directed to determining how we can best use the two-thirds of the continent which are too dry for agriculture.

The Darling Range project is at the other extreme — how, in a high rainfall area, to strike the best balance between agriculture and forestry to obtain optimum yields of water, and to appreciate the implications for both water supply and forest production near extensive mining operations.

In agricultural areas, where neither mining nor forestry seriously impinge, we should know the factors limiting diversification that may inhibit the use of a grain legume that could be valuable to Western Australia's agriculture.

Co-ordination

There are several areas of investigation where the activities of the Divisions will need to be carefully co-ordinated.

For all three Divisions the major aim will be to provide answers in terms of land use and development that will give economical utilisation of Australia's resources, at the same time maintaining a healthy and attractive environment.

Echidna display

Cont'd from page 1

It was extraordinarily small at hatching — about the size of a small bean — and it weighed about 380 mgms. It was hatched absolutely bare, its eyes were immature and were buried under the skin and it possessed no hind legs, only front ones.

By the time the young had reached 300 gm in weight (about 10½ oz) it had started to develop its spines and at this stage the mother decided baby must go — spines in a pouch are too uncomfortable. At this time the mother hides the youngster in a shallow burrow to which she will return from time to time to suckle her offspring until it is old enough to fend for itself.

The short-beaked echidna rarely grows much more than 18 ins in length and has short stout legs on which it waddles along in search of ants and termites, depending on its habitat. Its snout houses a long worm-like tongue which seeks out scurrying insects.

Echidnas probably locate their prey mostly by sense of smell but there is evidence to suggest their snout conducts sound waves to the ear so it is possible that ants and termites disclose their presence by making noises detectable by the snout.

On the other hand, the long-beaked species which can grow up to 3 ft long eats earthworms and its tongue is specialised for catching and ingesting these. At the end of it there is a groove fitted with backwardly directed sharp teeth which are used to hook the worm. When the tongue is drawn in, the worm is pulled with it.

Both kinds of echidnas are equipped with strong paws which allow them to go to ground literally—and vertically — with great rapidity. They also use these for ripping up the ground to expose their pray.

Merv has been to Papua New Guinea twice in search of *Zaglossus* — in July 1972 and September 1973. On both occasions he flew to Woitape, a mountainous and rugged area in the highlands of the Central

A new baby makes an appearance at the Division of Wildlife Research.—Photo: Ed Slater.

District. With the help of some local people and their dogs he succeeded in getting some fine specimens.

He also visited the Baiyer River Wildlife Sanctuary in the Western Highlands District where he was able to make a study of echidnas they had in captivity.

'The local people were able to give me a lot of information on both trips,' Merv said, 'some of which was previously not known to science.'

In July Merv will retire. He is already planning to return to Papua New Guinea, this time to the Western District in search of *Tachyglossus* and kangaroos. 'We know there are wallabies up there,' he said, 'but information I've been given suggests there could be large macropodids like our kangaroos in some areas. I'll start searching in the plains country behind Daru in the Western District.'

Merv has also been asked to collect earthworms in Northern Australia for the University of Queensland and the British Museum. He will also try and collect them in PNG's Western District. "Little is known about them,' he said, 'so very likely there will be a lot of new species.'

To the Editor

Sir—

A perusal of CSIRO Abstracts for October 1973 has prompted this letter.

Abstract 1225 — Review of Research Findings Concerned with Pastoral Development on the Wallum of South-Eastern Queensland — finishes with the following sentence: 'It is shown that pastoral development is clearly one of the productive uses to which this formerly useless region can be put'.

I am disappointed to see the word 'useless'. Useless for what? This is a hang-over from the exploitative phase of Australia's development typified by an attitude to land which assesses its usefulness or lack of usefulness solely in terms of the capacity to produce man's material needs of food and fibre. No other possible uses are considered.

No piece of virgin land can be called useless. It has intrinsic value as an example of a particular ecosystem and therefore is scientifically valuable in its own right. The piece of land could have value as a habitat for fauna or for particular species of native plants.

It can also have value for human recreation. It can also have value in producing food or fibre for man's needs.

The former Ninety Mile Desert in South Australia and the Little and Big Deserts in Victoria were given those names because at the time they could not be used to grow crops or graze sheep. The fact that these areas contain a wealth of native plants, particularly flowering heath species, was ignored.

In recent years, some botanists have started to find out how it is that the native species can grow in soils low in both plant nutrients and water reserves. These species must have mechanisms which the crop and pasture plants used in agriculture do not have.

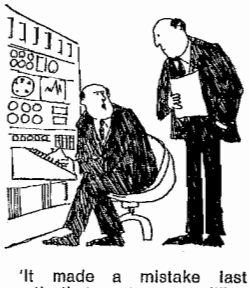
Fortunately, the exploitative mentality is slowly being replaced in Australia by a much broader approach to land use. This approach describes the biological and physical features of land and then carefully assesses its value for different purposes.

An administrative decision then follows as to the particular use that is to be applied to that piece of land having regard to the balanced satisfaction of a number of competing needs.

After the late Francis Ratcliffe received his doctorate at the Australian National University, he addressed the audience on the subject, 'Conservation — The Challenge to Man's Intelligence'. Here is an extract:

'During recent years, men have got a much better understanding of the things that are basic to the development of a country on wise, conservationist lines — things like town and country planning and the preservation of landscape values, the treatment of industrial wastes, the danger of the too-enthusiastic use of chemical pesticidies, the needs of the people for outdoor recreation of different kinds, the management of water catchments, the need to allow the intrinsic qualities of different types of land to determine how it should be used. The problem is how to channel this new understanding into the desired ends.'

—G. T. Sibley,
Head Office, Canberra.



'It made a mistake last month that cost us a million bucks and it says it's sorry.'

Visitor

Dr Alain Perrier, Charge de Recherches, INFA Station Centrale de Bioclimatologie Agricole, Versailles, is visiting the Division of Environmental Mechanics at Canberra as a Pye Fellow. Dr Perrier works in agricultural meteorology and is investigating turbulence within crop canopies.

His wife, Chantal, is an accomplished harpsichordiste and has given a memorable spinet recital of 18th Century music at the Pye laboratory to an appreciative audience.

'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.

Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478.

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Produced by the Central Communication Unit for circulation among members of CSIRO staff

March 1974

CSIRO staff involved in massive flood clean-up

CSIRO staff located in northern parts of Australia are gradually completing the drying out process after being well and truly awash during the recent floods.

With much of the country turned into an inland sea, many members have tales to recount.

The experiences of some, particularly those in the Brisbane area, have been little short of heart-breaking, but if there's a story to be told in the aftermath of it all, it's in the way people turned out to help their colleagues in trouble.

As soon as it was practicable, Jack Coombe, Senior Assistant Secretary (Administration) flew into Brisbane to take a look at the situation on behalf of the Chairman, Dr J. R. Price, and members of the Executive who had expressed concern for the flood victims.

Jack returned to Canberra with one overall impression and that was of tremendous admiration for the way everyone had battled to get colleagues' homes back into some sort of liveable conditions.

'By the time I was able to get through,' Jack said, 'it was impossible to recapture the terror and tragedy which must have existed for our people in Brisbane during the crisis, but even so there was ample evidence of the major disaster which had hit the city.'

On the personal side, 10 people were affected from the Long Pocket Laboratories with damage to their homes and loss of possessions, five from Tropical Agronomy and one from the Meat Research Laboratories.

The estimated damage ranged from $100 sustained in rented accommodation to $10,000. With the exception of one experimental officer, the rest who suffered personal loss were technical officers or ancillary staff.

Fortunately, damage to CSIRO property was not extensive and it is estimated the costs would be no greater than $15,000.

Evacuation

The RAO which is located on the seventh floor of a building in town had to evacuate its premises not because of flood damage to that floor but because water was in the basement and power and other essential services were cut off.

In the meantime, the staff did their best to operate business if not exactly as usual, at least as efficiently as possible.

David Thomas, the Regional Administrative Officer, worked from his home which still had power and a telephone and endeavoured to keep in touch with his staff by car wherever that was possible.

Realising that it was more important than ever to get pay cheques out on time, the salary section turned the dining room of Lex Johnson's Kangaroo Point flat into an office and somehow processed salaries.

Another group of machinists was set up in a temporary office near the computer at St Lucia.

The various laboratories had plenty of water around them and some small buildings, fences and pastures were inundated. At Amberley some stock was lost.

Prawn vessels

At Cabbage Tree Creek the staff of Fisheries and Oceanography had a few tense moments when four small vessels came down on the smaller of their two prawning vessels, the 'Penaeus'. It broke its moorings but was recovered from the mangroves with only minor damage.

The second and larger of the vessels, the 'Kalinda', had to keep steam up to withstand the current at her moorings. Part of the jetty was washed away at the height of the flood, but the 'Kalinda' was held fast by her anchors.

Damage to the jetty has since been repaired by the staff.

Refugees

In Karumba three EOs, David Baker, Chris Jackson and John Salini, spent some uncomfortable hours when they were ordered to evacuate their premises and board the small freighter 'Brewarrina' which then took them to Weipa.

In a telephone conversation from Sydney, David Baker told 'Coresearch' of their ordeal.

'It rained like you wouldn't believe it could rain,' was his first comment.

'The water banked up in the Gilbert and Nassau Rivers and we were told that at one time the Gilbert was about 100 miles wide.

'It swept through to Normanton and then headed for Karumba. We watched it coming up to the caravans, workshop and planes of the charter float plane company we have working with us. It was almost up to the offices of our buildings and already in our caravans, ablution block and garage when we left.'

Evacuation orders were given to the men by police who told everyone in town they must leave by the freighter. The only exceptions were those who had an escape route on the prawn trawlers.

'The ship took on 152 passengers which meant most of us were deck cargo. We started off for Weipa and 20 minutes later were stranded on a sandbar which had silted up. We refloated the vessel and by 1830 hours on the Saturday night were on the move again,' David said.

'We didn't make Weipa until 1530 hours on the Monday and in the meantime had struck the north-west monsoons and had to ride a storm out. Two passengers were taken to hospital on arrival and many were seasick.

'A "refugee camp" was set up with Comalco footing most of the bill. The people in Weipa did a first class job in helping those who were in a bad way,' David added.

The three men flew to Sydney but have now returned to Karumba to continue their work with the prawn survey. At the time of going to press, no estimate of the damage had been received but it had been reported that the float planes were safe.

Inquiries made around other parts of northern and central Australia where CSIRO staff are located revealed that while many places had experienced heavy rain and some flooding, the situation had been nowhere near as bad as it was in Brisbane. Some staff, however, are experiencing difficulties in getting supplies through as a result of damage to roads and bridges in remote areas.

At Culgoora near Narrabri, buildings were surrounded by water, but the flooding was not as severe this time as it was a couple of years ago.

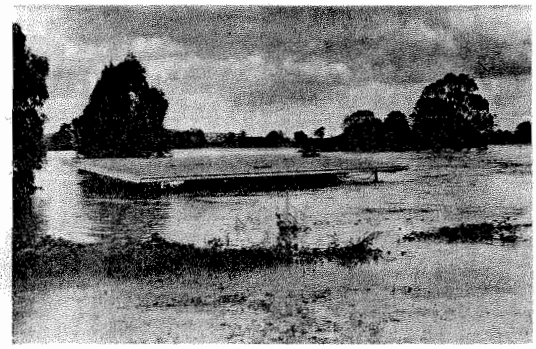
After news of the disaster in Brisbane had reached Canberra, Dr Price sent a message of sympathy to those staff members who suffered losses.

Since then, in an interview with 'Coresearch', he has spoken of his admiration of the

Cont'd on page 4

Above: Flood waters surround the buildings at Culgoora.

Below: Receding flood waters at Long Pocket Laboratories reveal the top of Animal Health's isolation pens. To the right is the faecal disposal plant — or it would be if you could see it under the water.



Volunteers from Long Pocket Laboratories at the home of Mr Les Adams in Brisbane. The house was completely submerged (see page 4).

More money for investors

The CSIRO Co-operative Credit Society in Melbourne has announced new rates of interest which became effective from 1 March 1974.

Regular fortnightly deductions from salaries have been increased from 6 per cent per annum to 7 per cent.

Lump sums invested for less than 12 months will now receive interest at 7 per cent instead of the previous 6.5 per cent.

For money invested for more than 12 months but less than five years the new rate has gone to 8 per cent.

On money invested for more than five years the interest rate per annum will also be 8 per cent.

From the same date the loan interest rate was increased to 9¼ per cent, reducing quarterly.

Counsellor takes close look at Japanese attitudes to science

Japan is a country which is becoming increasingly disillusioned with the side effects of its industrial explosion, particularly where it relates to pollution.

Reinforcing this feeling are the growing demands by industry for raw materials and energy, both of which are becoming increasingly more difficult to supply on a stable basis.

These are some of the opinions Mr E. E. Adderley has formed during his first two years as CSIRO's Scientific Counsellor at the Australian Embassy in Tokyo.

Back in Australia for briefing and some leave, Mr Adderley spoke to 'Coresearch' during a visit to Canberra.

'The people are now beginning to look for alternatives,' he said, 'and these may come by turning to what they call the "life sciences" which they hope might provide the solutions to their problems of pollution, over-population, environmental situations and shortages of food and natural resources.

'The Science and Technology Agency of the Japanese Government is proposing to establish this year a Life Science Research Institute which will be looking at the whole situation.

'This would include the development of another discipline known as "information science",' Mr Adderley said, 'where information about the life sciences is analysed and the public enlightened on what is happening and drawn into lectures and discussions.'

Pollution

Australians should be aware of what was happening in Japan because that country had struck problems which could hit this country in the future, he said.

'For instance, Japan has been faced with mercury poisoning from fish and the toxic effects of cadmium. The latter were caused through the outfall from a mineral processing factory into a river used for the irrigation of rice. The cadmium was concentrated in the rice and the consumers of that rice suffered crippling effects.'

In the industrial zone of Yokaichi, many people had developed asthma as a result of petrochemical pollution and in Tokyo the health of schoolchildren and others had been affected by chemical smog.

'The Japanese are doing a lot of work on these problems,' Mr Adderley said, 'but it is hard to determine the costs of these because of large government subsidies to industry to produce effective means of reducing the levels of pollution and the tax concessions offered to firms doing research.'

One new development which was of interest concerned the disposal of old tyres.

'Kobe Steel Limited has developed a pyrolysis process which produces a high calorie fuel, gas, oil and activated carbon from the tyres and its test plant has a capacity of 2.4 tonnes a day. From 1000 kg of waste tyres they recently produced 400 kg of fuel oil, 300 kg of gas and 300 kg of carbon.

Mr E. E. Adderley

'But I can't tell you the economics of the process,' Mr Adderley added.

Communication

During his two years in Japan, Mr Adderley said he had been impressed by the seemingly insatiable demand for knowledge on the part of people of all ages, from schoolchildren upwards.

'The dissemination of knowledge is equally impressive,' he said.

'There are more than 600 scientific and technological organisations and all of them would have up to three regular publications.

'Each research laboratory puts out its own publication and the media all make wide use of scientific material.

'They even produce children's newspapers covering scientific news stories,' he said.

'The number of scientific reference books for children is tremendous and, moreover, they are cheap.

'At the technical level, the Japanese Information Centre for Science and Technology publishes in Japanese abstracts of thousands of the world's scientific journals. The material is abstracted, computerised and published monthly and there are translation and duplication services available. All this is done on a commercial basis.

'Every Government Department has its own newsletter for the public which covers weekly or monthly summaries of its work as well as staff movements.'

Media coverage

Television coverage of scientific and educational affairs was very wide, Mr Adderley said, with one TV channel starting its operations at 6 am and continuing until midnight with nothing else but educational material.

'It goes through many of the languages in lesson form as well as the sciences — it even has Sesame Street in English.

'And on the other channels there are many demonstrations and discussions on scientific subjects.'

Australian scientific and other developments were given a good run in the media, mainly through handouts from the Australian Information Service, he said. One example had been the recent story about the development of 'pig power' for cars as a means of combatting the energy shortage.

'This quest for knowledge is inculcated at a very young age,' Mr Adderley said, 'and continues throughout a person's lifetime.

'And largely because of this, those who possess knowledge are prepared to pass it on. Scientists, for example, do not regard it as an intrusion on working time or a nuisance to be asked to talk to the media or to appear on a television programme. Rather, they consider it a great honour to be asked to do this.'

TA is awarded D.Sc. — but it took 20 years to get it

Around CSIRO, the award of a Ph.D. or D.Sc. always earns for the recipient the congratulations of colleagues.

But when Kevin Sheridan of the Division of Radiophysics was awarded his degree of Doctor of Science from the University of Queensland recently, it meant much more to his colleagues than just an occasion to shake hands and say 'well done'.

Because Kevin started working for that award when he was a technical assistant and although it has taken him more than 20 years to get it, his perseverance has won through and his colleagues are delighted with his success.

Kevin joined Radiophysics in 1945 after doing wartime work with the Department of the Navy. A year later he was sent overseas to the UK and USA to demonstrate the air navigational aid MTR (Multiple Track Range).

Glowing reports of his efforts, including commendation from Sir Ralph Cochrane of the RAF, arrived back in the lab.

In 1950 he started part-time studies at the University of Sydney and the following year took leave to obtain his B.Sc. at the University of Queensland.

In 1955 he completed, again through part-time study, a B.A. degree in mathematics at the University of Sydney.

Kevin was made a principal technical officer in 1957, the following year was transferred to research officer grading and in 1971 became a senior principal research scientist.

Some of Kevin's outstanding contributions have been in the field of radioastronomy. At present he is responsible for the equipment — its design, construction, installation, maintenance and improvements — of the Culgoora Solar Observatory, but the Mills Cross was made possible through his work on the receiver design and construction. Alec Little, now of the University of Sydney, teamed with him and designed the aerials for this unique instrument.

Kevin was also the Australian representative on the satellite coronograph-heliograph in the Skylab project.

Outside working hours Kevin continues to take an interest in astronomy and was the foundation secretary of the Astronomical Society of Australia.

Scientists to visit China

Two members of CSIRO's staff, Dr J. P. Wild, Chief of the Division of Radiophysics, and Dr J. M. Rendel, Chief of the Division of Animal Genetics, will leave Sydney on a visit to China later this month.

They will be participants in a joint delegation from the Australian Academy of Science and the Australian National University.

The invitation to visit China came from the Academia Sinica, Peking.

Heading the delegation will be the President of the Academy, Sir Rutherford Robertson. The Vice-Chancellor of ANU, Dr R. M. Williams, will also be in the group. Dr Rendel will be travelling in his capacity as a Vice-President of the Academy and Dr Wild as its Foreign Secretary.

The visit is expected to last four weeks but at the time of going to press, no details were available about the programme. However, since the aim of the visit is to promote contact and co-operation between Australian and Chinese scientists, both Dr Wild and Dr Rendel are hoping to have the opportunity to meet and talk with scientists whose professional interests are similar to their own.

It is hoped that the Chinese will make a return visit to Australia later in the year.

Return

Mr Edih Suwadji of the Indonesian National Atomic Energy Agency (Agriculture and Food Preservation Laboratory) will return to Jakarta this month after spending 15 months with the Division of Soils, Adelaide. He collaborated with Drs K. G. Tiller and R. S. Beckwith in research on the micronutrient nutrition of rice.

Building Research helps Malaysian timber project

Australia's experience and reputation in the milling and processing of hardwood timbers has resulted in a request from the Malaysian organisation, Ibam Sendirian Berhad of Pahang to CSIRO's Division of Building Research for help in their new timber programme.

Ibam Sendirian Berhad was incorporated jointly by the Federal Government of Malaysia and the Government of the State of Pahang to establish an integrated timber complex at Bukit Ibam.

The company has been allotted 260,000 acres of tropical forest, the main species being tropical hardwoods with meranti and similar timbers predominating.

It is planned to log 130,000 acres and then the Department of Agriculture will progessively clear the rest to establish oil palm plantations. The remaining 130,000 acres will then be worked on a perpetual yield basis by Ibam.

The Division's Forest Conversion Engineering Group of the Forest Products Laboratory, is to act in a professional capacity as design consultant to Ibam for the project.

The team will be under the leadership of Mr W. M. Page and will include Messrs B. McCombe, L. S. Barker, K. W. Fricke, R. M. Liversedge, P. G. Simfendorfer and R. Northway.

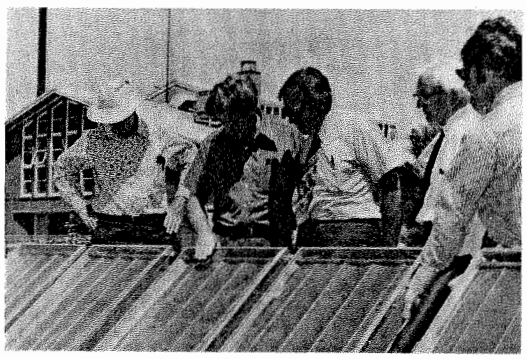
So far the work has involved Mr Page in three visits to the site and Messrs Barker and McCombe one each.

The complex will cover 60 acres and will contain a sawmill, pre-driers and kilns, mills, a preservation pressure impregnation plant and a panel prefinishing plant as well as ancilliary buildings and equipment.

All of the sawmilling equipment, pre-driers and kilns are of Australian manufacture, representing an export order for Australia of about $1 million.

The forest industries currently make the second largest contribution to the Malayan national economy and are predicted to become top export earner within the next few years.

In addition to assisting in this aim, the Ibam project will ultimately provide employment for about 1400 workers, supporting about 5000 families in the rural community of Bukit Ibam.



The Minister for Overseas Trade has been among recent visitors to the Division of Mechanical Engineering, Highett.

Dr Cairns made the tour on his own initiative so that he could make himself familiar with the Division's research and development work on solar energy utilisation.

Officers outlined the Division's activities in this area to the Minister and showed him some of the current developments and experiments. Among those present on the occasion were Mr V. Burgmann (Executive) and Mr Roger Morse (Solar Energy Studies Unit).

Picture: Dr Cairns examines part of a solar water heater. From left: Mr E. T. Davey, Dr Cairns, Mr W. Read, Mr V. Burgmann and Dr J. J. Kowalczewski.

Veterans leave CSIRO after long service

The bright young people who were on the staff of the National Standards Laboratory in the early 1940s are now like the Laboratory itself — much more mature. Recently several who have been members of the staff through most of the life of the Laboratory have reached retiring age.

One of these was Mr Eric Eustace who retired after 30 years of service. He joined NSL in 1942 as a Male Assistant (Workshops) and at the time of his retirement was Senior Laboratory Craftsman in charge of the Plumbing Workshop.

Eric was unfortunate enough to spend a considerable part of the 32 years in which he was associated with NSL not in NSL itself but in associated temporary buildings.

The wooden shed where he worked first was demolished to make room for the new Chemistry School of the University of Sydney and at that stage he moved to a galvanised iron shed outside the main University grounds.

When the Division of Radiophysics moved to Epping the NSL plumbers were able to move into the building that had accommodated the Radiophysics workshops leaving their tin shed to the University Department of Fine Arts.

Eric has left convincing evidence of his skill throughout NSL in installations such as helium reticulation systems and cooling coils for a very large magnet.

Building Research

Mr E. H. (Ern) Waters has retired from the Division of Building Research after 27 years with the Organization. To mark the occasion he was given a farewell gift from his colleagues which was presented by the Assistant Chief of the Division, Dr F. A. Blakey. Ms Waters proudly shared the moment.

Ern was one of the foundation members of the then Building Materials Research Section in 1946. At Building Research he set up a group to work on surfacing materials and remained its leader until his retirement.

During his long career with the Division he became well known, particularly for his work in the fields of wall and floor tiling, mortars and plastering and he was active on several Committees of the Standards Association of Australia.

For many years Ern assisted the extension work of the Division by giving building science lectures in chemistry at the School of Architecture and Building at the University of Melbourne.

In his retirement he plans to continue this university activity and to extend it where possible.

New medal for astronomer

Dr Paul Wild, Chief of the Division of Radiophysics and the man who has been described as 'the world's foremost solar physicist' has been awarded the Herschel Medal of the Royal Astronomical Society.

This is the first time the award has been made and has been given to Dr Wild for his outstanding contribution to solar radio astronomy.

The Society is hopeful that the medal can be presented to Dr Wild in England.

The Herschel Medal is to be awarded at two-yearly intervals for 'work within the field of stellar and galactic physics, including the sun'.

The Division of Mineral Chemistry becomes, for a day, the location for 'Shannon's Mob', a new Australian television series.

Min. Chem. becomes film location

When Australia's latest espionage film series 'Shannon's Mob' is shown on the Channel 9 television network this year at least one location will have a familiar appearance — the headquarters of KIF (alias the Knowledge International Foundation) will look surprisingly like the outside of the Division of Mineral Chemistry in Sydney.

The series is a production of Fauna Films Pty Ltd which lists among its previous successes Skippy the kangaroo, Boney, the Aboriginal detective, and the features 'Nickel Queen' and 'Weird Mob'.

The story has an Interpol flavour with the two main ASIO-type roles being played by Sydney actors, Robin Ramsay and Frank Gallacher.

In it, KIF is a research organisation and for this a specific location was needed.

The exterior grounds of the organisation were filmed at North Head with the Army artillery establishment and the internal scenes of the research laboratory were shot on a set built at North Head.

'But for the exterior scenes of the building we needed something that looked like a research organisation's administration block and CSIRO's Mineral Chemistry headquarters seemed just right,' Ms Barnard said.

Only outside scenes were required and since the film unit's presence was not going to disrupt work, the Division was happy to co-operate with the company.

The New South Wales Police Force, the Army, Navy and other government departments have also given the company assistance.

The series is expected to have its premiere showing sometime this month.

Wrong number

A Nedlands woman in Western Australia has sent out a plea to CSIRO staff to stop using her telephone number — 86-4457 — in mistake for the CSIRO number at Floreat Park — 87-4233.

A call from Perth has requested that all staff check the number they are using and if the wrong one is on your list, please alter it.

. . . and our 'poly' food is filmed in London

Ruminant-derived polyunsaturated food from Australia has been featured in a film made by the BBC in London.

The food, which included fillet of beef from CSIRO's Canon Hill Meat Laboratory in Brisbane, and butter, three types of cheeses, a cheese dip, yoghurt and ice-cream from the Dairy Research Laboratory at Highett, was all flown to London specially for the occasion.

The sequences of the film were to be part of the BBC's 'Tuesday Documentary' which on this occasion was based on diet and its relation to coronary heart disease.

The inclusion of the polyunsaturated part of the story arose after a meeting between the BBC and Dr Alan Johnson of the Division of Food Research, North Ryde.

'They heard I was in London and talked to me about our work on polyunsaturated food,' Alan said. 'I told them what we'd done and left them with a copy of "Rural Research" which featured the story of the project.

'Not long after I was back in Sydney they rang to see if we could supply them with some of the food which would be cooked in the Cafe Royale and eaten by some of the programme participants including Sir Charles Forte, an internationally known restauranteur and head of a large catering organisation and Dr Magnus Pyke, research director of the Distillers' Company, Scotland.'

In co-operation with Dalgety Agri-Lines, the firm licensed to commercially produce the polyunsaturated foods, a shipment was made up and sent to Mr R. D. Croll at ASLO.

Throughout the production Mr Croll acted as liaison officer between CSIRO and Dalgety Agri-Lines and the BBC.

The food arrived in perfect condition and was duly served at the restaurant.

The chef had only one criticism to make — he found the beef fillet was a bit 'fresh' for his tournedos. He normally would expect a fillet to be hung to the point where it could be almost cut with a fork, he said.

During the filming a fillet was cut to show the normality of its texture and appearance. A second choice, beef stroganoff, was also on the menu.

Some concern was expressed by the CSIRO staff present that the film team referred to the meal as being a 'low fat diet' and this had to be straightened out.

Even so, one woman approached Bob Croll afterwards and wanted to know whether the food was synthetic or real.

All the participants were given some of the facts of the polyunsaturated story by the CSIRO people before they left the restaurant.

The film was expected to be shown in Britain sometime in February.

Dutch gardener helps migrants

For five days a week Henk van Dijk is happy to spend his working hours looking after the glasshouses and gardens around the laboratories of the Division of Horticultural Research at Adelaide. But once he's away from CSIRO, Henk puts those interests aside and turns to his favourite pastime of Dutch folk dancing.

This month will be of special significance to him. He will be involved in the production of two concerts to be given at Memorial Drive during Adelaide's Festival of Arts.

For Henk this is a culmination of many years of hard work and determination to keep alive and encourage the interest in the culture and folk lore not just of his native Holland but also of other overseas countries.

His own association with folk dancing goes back to the early 1960s when he and his sister first arrived in Australia. Settling in Adelaide, they both felt 'a bit lost' in a strange country and more as a means of combatting loneliness than any particular interest in dancing, they joined a Dutch Folk Dance Group and learned for the first time the traditional dances of their own country.

By 1962 Henk had taken over the leadership of the group which then numbered only 16 people. 'Now there are more Australians in the group than there are Dutch people,' he said.

About this time the group became interested in the Good Neighbour Council, a community service for migrants. The Council went on to form a folk arts committee with the idea of preserving the national heritage of immigrants and this embraced a full range of cultural activities — arts, crafts, dancing and music — and the Dutch group played an important role in its development.

'Interest in the activities has continued to grow,' Henk said, 'until now we have 25 nationalities represented with a membership of 1100.'

The committee is happy to arrange performances for various charities, and outside the Good Neighbour Council itself, concerts have been staged for Red Cross and the members have regularly taken part in the Festival of Arts.

When the Festival Hall was opened the folks arts committee was asked to give a two-night programme and on that occasion Henk was assistant director. So successful was the show that they were then asked to put on a special matinee performance as well.

'At each of the Festival concerts we make a point of staging an exhibition of arts and crafts from different countries too. This gives visitors a chance to see something of the culture our people have brought with them to their new land and helps us to retain our memories of our native lands and pass on to our children something of what for them has become a dual heritage,' Henk said.

Statistician home

Mr G. N. Wilkinson, who left CSIRO's Division of Mathematical Statistics in 1970 to undertake extensive development of the GENSTAT statistical computing system at the Rothamsted Experimental Station in the UK, is back in Australia during February and March, as a Visiting Professor at the University of Adelaide. He is visiting the Mathematical Statistics Division while in Adelaide and has been invited to spend a week with the Division of Computing Research at Canberra towards the end of March.

No room

The Editor regrets that a number of stories originally scheduled for this issue of 'Coresearch' have been held out because of lack of space. This was caused through the inclusion of the feature on the northern floods. It is hoped to use this held-over material in the April edition.

SAFETY NEWS

Liquid mercury is potential hazard

Liquid mercury produces enough vapour at ordinary room temperatures to poison people who inhale the vapour for a period of time.

Mercury can also be absorbed via the skin.

As there is no single diagnostic test that will predict mercury poisoning, extreme care in the handling of it is essential.

It should be noted that at ordinary room temperatures, the concentration of mercury vapour in the air can be up to 150 times the safe limit.

Properties of mercury

Mercury has a high density and a high surface tension but such a low viscosity that it is extremely difficult to pour without splashing or spilling. Falling drops break into smaller droplets, many of which are too small to be seen with the naked eye.

The high surface tension of mercury makes the agglomeration of small droplets almost impossible, so decontamination of an area where mercury has been spilt is extremely difficult.

The concept that a sloping floor or bench will allow all mercury droplets to roll to a sump is not valid — visible small droplets can frequently be seen adhering to smooth vertical surfaces.

The vapour pressure of mercury increases rapidly with increases in temperature. At 100°C this is more than 200 times the vapour pressure at 20°C. As a consequence, radiators, motors, ovens and other heating apparatus greatly increase the mercury vapour concentration if droplets are left on or near such equipment.

A typically dangerous situation occurs when a mercury thermometer breaks in a heating oven, the design of which usually makes decontamination impossible.

Precautions

Skin contact should be avoided whenever possible.

Most mercury handling operations are carried out in the open laboratory, but consideration should be given to the more frequent use of fume cupboards, glove boxes or special enclosures.

All operations, where practical, should be carried out over a tray containing water. The presence of water reduces the release of mercury vapour and helps to prevent the formation of small droplets of mercury.

The exhaust from the mechanical backing pumps on a mercury diffusion pump can discharge dangerous concentrations of mercury vapour.

Because of its high density, containers designed for aqueous solutions are not suitable for the storage of mercury unless they are particularly robust. Ordinary reagent bottles were not designed to contain mercury, and can burst under the excess weight.

If such containers must be used, they need to be protected by placing them inside a thick-walled plastic beaker.

Where mercury is handled on a regular basis, evaluation of the vapour concentration should be made using a continuous direct reading instrument.

Protective measures

Smoking, eating or drinking should be prohibited in laboratories where mercury is handled or used.

Ideally, clothing and shoes used in such laboratories should not be worn away from the laboratory to prevent the spread of contamination.

This is particularly important if mercury has spilt on to the floor from, say, bench height. On hitting the floor, the mercury would break up into small droplets which would lodge in and on shoes, and on clothing covering the legs, particularly in trouser cuffs. The wearing of this clothing outside the laboratory could spread contamination, particularly into the home.

'I sometimes wish that I, too, were working for myself, and not just for humanity.'

Decontamination

The bulk of spilled mercury can be recovered by suction, using a glass tube drawn out to an opening of about 1 mm and connected by flexible tubing to a filter flask in turn connected to a source of vacuum.

This method will only enable the collection of the larger visible drops and will not cope with those small droplets which would be sprayed around the area. However, as much as possible of the spillage should be collected in this way.

For the remainder, there is no really satisfactory method of preventing volatilisation of the mercury.

Treatment of the area with a lime sulphur slurry will assist. The mercury particles then become coated with the sulphur and evaporation is reduced. However, vibration and rubbing, as occurs with foot traffic, will break the coating and allow vaporisation to continue.

Another method is to treat the area with zinc dust which forms an amalgam with the mercury and reduces the volatility.

After decontamination has been performed as well as possible, the area should be monitored for mercury vapour concentration. If the atmospheric contamination cannot be reduced to an acceptable level, floor coverings, etc., may have to be stripped and replaced.

Alternatively, forced draught ventilation can be used to provide sufficient air movement to reduce the contamination to an acceptable level.

Special areas

The use of exposed mercury should be avoided wherever possible in conditioned rooms or areas which generally rely on air recirculation. In such areas, the atmospheric contamination can reach dangerous levels.

In air-conditioned laboratory blocks, a similar situation can occur. Ideally, exhaust air from areas containing exposed mercury should be vented to the atmosphere.

Disposal

The disposal of contaminated mercury and its salts presents special problems, e.g. the Sydney Metropolitan Water Sewerage and Drainage Board will permit no mercury in any form to enter its sewerage system or stormwater channels.

Advice of the Divisional or Head Office Safety Officer should be sought regarding the disposal of mercury.

—J. W. Hallam,
Safety Officer

Northern floods

Cont'd from page 1

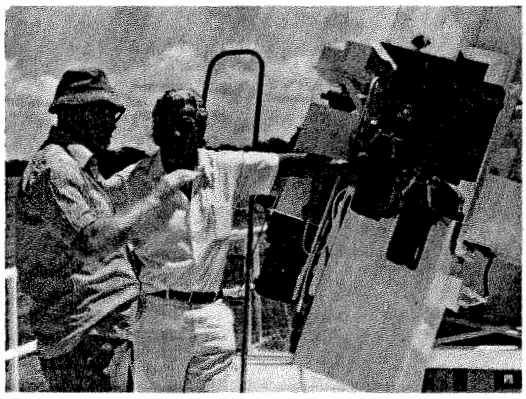
way in which so many worked day and night to help their colleagues and neighbours and assisted the Civil Defence authorities.

Assistance

He also expressed his gratitude to all those in the unaffected areas of the country who responded to the appeal for funds which was launched around the southern Divisions.

At the time of going to press, the results of this appeal were not known but backing it up have been offers of help from the southern Benevolent Funds, from the Technical Association and from the Officers' Association.

Les Adams has a fine crop of water hyacinths in his unwanted roof garden. Long Pocket colleagues are helping him to clean up the mess.



Dr R. G. Giovanelli, (left) Chief of the Division of Physics, shows the Minister for Science, Mr W. L. Morrison, some of the instruments the Division operates at Culgoora in their solar observations.

'Per ardua ad astra' for Minister on NSW tour

The Minister for Science, Mr W. L. Morrison, has been on a fact-finding tour of some of New South Wales' astronomical observatories.

He was accompanied by the Chairman of the Executive, Dr J. R. Price, and the Permanent Head of the Department of Science, Sir Hugh Ennor.

Other members of the party included two members of the media, Ms Jane Ford, 'Sydney Morning Herald', and Mr Robert Haupt, 'Financial Review', Mr Terry Healy, CSIRO Liaison officer on the Minister's staff, and Dorothy Braxton of the Central Communication Unit.

First stop for the group was at Parkes where some of the complexities of radio astronomy were explained by the Chief of the Division of Radiophysics, Dr Paul Wild, the Division's 'astronomer-at-large', Mr John Bolton, the officer-in-charge at Parkes, Mr John Shimmins, and other members of the staff.

At Siding Spring the Minister inspected the new 3.9 m telescope being built for the Anglo-Australian Telescope Board and which is scheduled for its official opening towards the end of this year.

While he was there the Minister met the newly-appointed Director of the observatory, Professor Joseph Wampler, from the Lick Observatory in the United States.

Mr Morrison was also shown the 1.2 m Schmidt telescope and the facilities of the Australian National University which all form part of the Siding Spring astronomical complex.

At Narrabri the party inspected the stellar interferometer devised and operated by Professor Hanbury Brown of the School of Physics of Sydney University and saw the model of the new interferometer they hope to be able to construct if funds become available.

The officer-in-charge at Culgoora, Mr Warren Payten, was host for the party at CSIRO's facilities there where the Minister was welcomed by Dr R. G. Giovanelli, Chief of the Division of Physics.

The party made a tour of the various installations at Culgoora and was given some insight into the solar research which is being undertaken by the Divisions of Physics and Radiophysics.

During the course of the tour Mr Morrison had the opportunity to meet some of the foremost astronomers in Australia, or in the world, if it comes to that.

He was able to talk to them about their requirements for the future, and the scientists were able to explain to him how new instrumentation was necessary if they — and Australia — were to retain their place in world astronomical circles.

The projects include a new millimetre telescope at Parkes, a new stellar interferometer to enable Professor Hanbury Brown's group at Narrabri to extend their work on measurement of stars and a joint Australian-European solar observatory which is being proposed for the Canary Islands.

This last-mentioned telescope is a proposal by European solar astronomers who, appreciating the costs involved in the construction of such an instrument, have suggested that it should be established and operated by a number of countries.

According to Dr Giovanelli, it has been suggested that Australia should provide up to 10 per cent of the funds and in return it would return 10 per cent of the observation time.

'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.

Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478 or Wendy Parsons, 48 4227.

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Produced by the Central Communication Unit for circulation among members of CSIRO staff

April 1974

CSIRO staff help to isolate M.V. encephalitis virus

Two members of the Division of Wildlife Research, Kent Keith and Bevan Brown, have spent 10 uncomfortable days working in swamps around Griffith, Hay and Mildura. Their mission — to help isolate the Murray Valley encephalitis virus.

Kent and Bevan were part of a team of virologists and ornithologists led by Dr Ian Marshall, Senior Fellow in the Department of Microbiology of the Australian National University's John Curtin School of Medical Research.

The team also included other ANU staff and scientists from the Veterinary Research Station at Glenfield and the School of Microbiology of the University of New South Wales.

The aim was to find the species of mosquito responsible for spreading the virus between its wildlife hosts and man, to recover the virus from suspected bird carriers, and to investigate the relationship between the virus causing encephalitis in humans with that causing a concurrent outbreak of encephalitis in horses.

The Murray Valley encephalitis virus was originally recovered from the brain of a fatal human case in 1951. The same virus has been obtained from mosquitoes in north Queensland and in Papua New Guinea.

The recent field investigations have tested the theory developed after the 1950-51 epidemic that the virus is carried to the Murray Valley from northern Australia or Papua New Guinea by waterfowl and that the subsequent transmission to local birds and man is made by a certain species of river-haunting mosquitoes.

For Kent and Bevan the project meant camping out in the Barren Box swamps near Griffith, at Hay on the Murrumbidgee, in the Gol Gol swamps at Mildura, at Mooroopna near Shepparton, in the Barmah State Forest and in areas near Rutherglen and Swan Hill.

'The ANU team collected the mosquitoes while we caught the birds,' Kent told 'Coresearch'.

'We had to take blood samples from them in the field and then remove samples of the serum from the blood.

'The serum and blood clots were placed in liquid nitrogen as were the captured mosquitoes and are now being tested back in Canberra at the John Curtin School.

'All told we took 450 blood samples and 150,000 mosquitoes were brought back.

'How soon the virus is isolated depends a bit on luck . . . if the early samples tested reveal the virus, then that's our good fortune. But it could be the last.'

The team hopes that the work will lead to the pinpointing of the main species of mosquitoes which transmit the virus to both man and wildlife.

'If it turns out to be a species which is a "domestic" variety found around suburban areas the control would be comparatively simple, but if, as is more likely, the mosquito turns out to be one of the bush kind, then control is almost impossible,' Dr Marshall said.

In this case, the team could only advise people of the insect's habits, the times it is most likely to feed and the places it inhabits.

'The only thing to do then,' he said, 'would be to avoid the areas under those conditions.'

This type of work is not new to Kent. Between 1962 and 1966 he made several visits to the Sepik District of Papua New Guinea with teams again led by Dr Marshall and during those expeditions they were successful in isolating the virus from mosquitoes.

Later he again worked with the team in the Nelson Bay area near Port Stephens where they isolated the Ross River virus causing the disease known as epidemic polyarthritis.

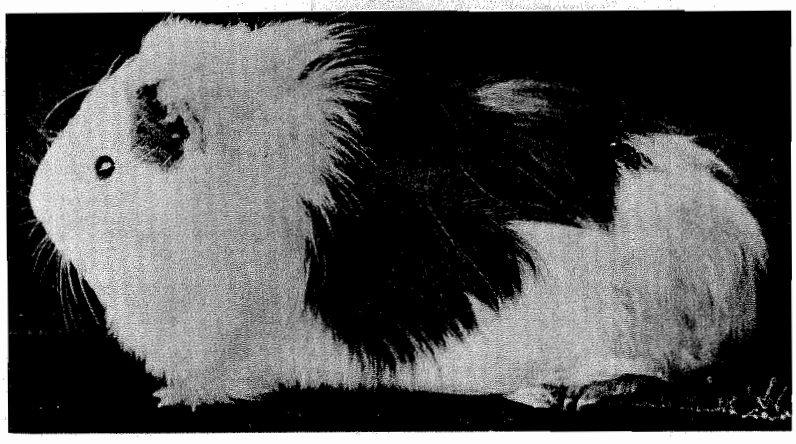
This has nothing to do with the usual forms of arthritis but is a virus carried by mosquitoes which have fed on small ground mammals.

Last year Kent made another trip with the team down the

Cont'd on page 4

Kent Keith (left) Wildlife Research, and Rush Regney of the Research School of Biological Sciences of the ANU placing mosquitoes into a holding net after they have had a blood feed on birds near the Barmah State Forest.

New hope for the thin-on-top



Grass may not grow on a busy street, but a report from our Coresearch correspondent in Irkutsk offers a ray of hope for those with fallow follicles.

The long-haired guinea pig above owes his luxurious coat to a new Soviet discovery . . . a magic elixir which may help to combat baldness.

It seems that it will also help increase the wool yield of sheep and improve the pelt quality of animals on fur farms.

According to the Soviet newspaper 'Trud', the scientists who made this discovery were not deliberately looking for a cure for baldness.

Rather, they were studying biologically active organosilicon compounds. During their work they obtained a preparation called 'Mival' which makes it possible to greatly increase the length of animals' wool and hair at up to 10 times its normal growth rate.

The name 'Mival' is derived from the first names of the men concerned, Mikhail Voronkov and Valery Dyakov, both of the Irkutsk Institute for Organic Chemistry.

If 'Mival' can do this for a guinea pig, what can it do for you?

New complex created in Melbourne

CSIRO's vital statistics have grown with the creation of one new laboratories complex, two new Chiefs and one new Division.

The changes occurred when the Division of Applied Chemistry was restructured.

The two new Divisions will be known as the Divisions of Applied Organic Chemistry and Chemical Technology and together will form the Applied Chemistry Laboratories.

Dr S. D. Hamann has been appointed Chairman of the Applied Chemistry Laboratories Committee, and will remain at Fishermen's Bend.

Dr D. H. Solomon has been appointed Chief of the Division of Applied Organic Chemistry, Fishermen's Bend, and Dr D. E. Weiss has been appointed Chief of the Division of Chemical Technology, the headquarters of which will be located at South Melbourne.

The Division of Applied Organic Chemistry will be concerned with the synthesis of new pesticides, naturally occurring biologically active compounds, synthetic polymers and atmospheric chemistry.

The Division of Chemical Technology will be concerned with the recycling of resources, utilisation of renewable resources and the protection and conservation of natural resources.

New RAO appointed for NSW

Trevor Clark has been appointed Regional Administrative Officer for NSW, replacing Frank Whitty who was recently transferred to the Scientific Liaison Office, London.

Trevor joined CSIRO in 1946 and, after periods in Melbourne and Canberra, was one of the pioneers when the Sydney Office opened in 1950. He was promoted to Accountant there in 1958.

Trevor Clark

Trevor has been active in extra-mural activities, particularly in the Laboratories Credit Union, of which he is chairman of directors, and in the Administrative and Clerical Officers' Association. He has also been honorary auditor to a number of staff organisations.

Mountain pygmy possums now living in captivity

This tiny possum, and several others like it, can lay claim to being one of Australia's smallest and most interesting marsupials. It can also claim to be one of the most unusual species of wildlife held in captivity in Canberra.

The man who brought the possums to Canberra is Hans Dimpel, a taxidermist at the Division of Wildlife Research at Gungahlin.

The possums, commonly known as the mountain pigmy possum and scientifically called *Burramys parvus* Broom, are being kept in a specially constructed house at Hans' home in Weetangera, a Canberra suburb.

Special permission had to be obtained for Hans to have them there while they are under scientific observation since it is an offence to remove protected fauna from its natural habitat in NSW, and to keep it in captivity in the ACT.

Until recently this tiny animal which when fully grown measures only 95-100 mm with a tail that is about 140 mm was known only from fossil remains found in New South Wales in 1896; it was unknown as a living animal until 1966 when a specimen was caught in the kitchen of a ski-lodge at Mt Hotham in Victoria at an altitude of 1933 m.

The closest relations of the mountain possum are the pigmy possum, which are found at lower altitudes and which inhabit areas such as the Tidbinbilla nature reserve in the ACT, and the pigmy glider.

Hans found his little possums when he carried out the first major fauna survey in the Kosciusko National Park, begun in 1968. For the next three and a half years he spent much of both the summer and winter periods visiting five different study areas, each one of which was entirely different in its habitat.

'The alpine area was given the most consideration in the hope that we'd find small mammals there,' Hans said, 'but we didn't expect to find the possums in that locality. Rather, we believed that if we did see any of them they would be in the dense bush or wet areas.'

Discovery

The first animal found was live-trapped in February 1970 by two visiting Canadian naturalists, Ian and Joyce McTaggert Cowan, about one mile north of Schlink Pass at 1950 m on a small creek.

Before that specimen was identified, Hans and Ian Mason, a technical officer from the Division, live-trapped a second female a month later near the Snowy River. Then a week or so later, the two men trapped a male in the same area.

Both sites are about 100 km east-north-east from Mt Hotham, where the original living specimen was found.

'We used baits of either rolled oats or rolled oats and walnut chips,' Hans said, 'both of which the possums like to eat now they're in captivity.'

The first three possums were brought back to Canberra but all died within a few months. An examination revealed that they had suffered from a deficiency of vitamins so when several more were captured the following year Hans made sure that their diet was boosted with vitamins and calcium.

'I just used the same things as we would give to our own children,' he said.

Conditions

Despite the fact that in their natural habitat where they live in a severe climate and where the annual precipitation is 200-320 cm, much of it winter snow with winter temperatures frequently below freezing point, the second lot of animals and others which have since been brought down to Canberra have thrived in warmer conditions.

They have also begun breeding for the first time in captivity.

'The pouch young are so tiny that they're only the size of a match head at birth,' Hans said. 'The normal litter is four.'

With the colony seemingly successfully established, the Division, with the permission of the NSW National Parks and Wildlife Service, has made a gift of seven possums to Taronga Park Zoo where they are living in the nocturnal house.

These have now begun to breed there.

New outlook

For Hans the survey opened up a whole new world, for he is more accustomed as a taxidermist and tanner to handling dead animals. He is an expert in scientific soft tanning, a method he specialised in in his home town of Friesenheim in Germany's Black Forest.

Twelve years ago Hans decided he needed fresh fields to work in and took off round the world, learning more about tanning as he travelled. He settled in Australia and joined CSIRO in 1966.

At the Division he found several hundred large skins of various mammals either preserved in alcohol or dried hard after cleaning, without further treatment. He set about to tan them, teaching others at the same time to do the work in this new soft way.

'You can tan anything from a buffalo skin to that of a possum,' Hans said. 'You keep the animal's natural colouring, which is important for research work, and the skins remain soft and pliable.'

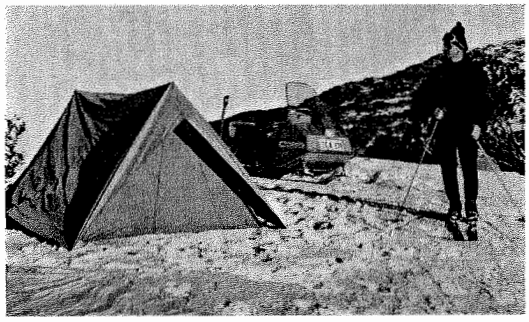
But though Hans' work in this area is still his major assignment, he is never happier than when he is out in the open. He has now joined several scientific surveys and this chance to study Australian wildlife in its natural habitat has, he says, given him a new insight into his adopted country.

As a result of his work he has now written several technical papers in collaboration with John Calaby and other scientists.

His greatest satisfaction, however, has been in seeing an animal thought to be very close to extinct begin to flourish in numbers that could ensure its future security.

Above: The mountain pygmy possum found in the Mt Kosciusko National Park. Picture: Elizabeth Danyi.

Below: Hans Dimpel at Charlotte's Pass in wintry conditions during the Mt Kosciusko National Park fauna survey. Picture: Ed Slater.



Letters to the Editor

Freedom to print

Sir—Increasing numbers of publications, particularly those with an environmental content, are now being published by officers outside CSIRO. I suspect there may also be officers whose papers are of scientific merit, but never see the light of day, because of comments from unsympathetic colleagues and superiors.

This trend is out of keeping with the spirit of the remarks by the Minister for Science, Mr W. L. Morrison, to the Annual General Meeting of the South Australian Branch of the CSIRO Officers' Association on 4 May. Furthermore, I believe it to be detrimental to the Organization, to the scientists concerned, and ultimately to society as a whole.

It would be unfortunate if the Organization were to disown a piece of work simply because it may not be entirely within the terms of reference of the Division at that particular time. To my knowledge no comparable restrictions exist within universities.

Inevitably work submitted privately is suspect by editors and the readership alike, because a scientist's affiliations are generally well known.

A lack of official approval does not necessarily mean that a paper is substandard, and yet it is frequently interpreted as such.

I would like to hear of details from colleagues about papers which were:

- published without any reference to the Organization,
- published privately because of rejection by the Division, and
- not published because of pressure from within the Division.

I am hoping to compile information on this with a view to advising the CSIRO Officers' Association, and subsequently the Executive on the extent of these practices. Hopefully, this problem will ultimately be resolved for everybody's benefit.

—P. H. Springell,
Division of Animal Genetics.

Ms Jewel Pels, Rangelands Research Group, Deniliquin: Sorry we can only publish letters which carry the writer's signature.

However, that 'dish' you referred to at Parkes is quite a dish. Vital statistics are a diameter of 64 m, it has 30 radial ribs cantilevered out from a central hub and its aerial cabin is supported by three legs. Who says that's degrading?—Ed.

Three exhibits for Expo '74

Spokane, an American city of 180,000 people, located in an impressive valley 100 miles south of the Canadian border and 300 miles inland from Seattle, will be the site of Expo '74.

Running through from 4 May to 3 November, the fair is being staged as an official event in the United States bicentenary celebrations.

Its central theme is 'Progress without Pollution' and it has been dedicated to the improvement of man's environment.

Australia is one of the 11 nations taking part and CSIRO will be represented through three exhibits — a solar energy water heating unit, constructed for Expo by the Division of Mechanical Engineering, a photographic display of Australian wildlife compiled by Ed Slater from the Division of Wildlife Research and a model of the Sirotherm desalination process for purifying water for domestic and industrial use, developed jointly by ICI Australia and the Applied Chemistry Laboratories.

Although CSIRO will not have any staff at Expo '74, the Organization was represented on the Advisory Committee set up to plan the Australian pavilion by Dr M. F. C. Day, a member of the Executive.

The Australian exhibition will be in harmony with the theme and will reflect the real concern the country has on environmental issues.

Visitor

Mr G. N. Wilkinson, who left the Division of Mathematical Statistics in 1970 to undertake extensive development of the GENSTAT statistical computing system at the Rothamsted Experimental Station in the UK, has been in Australia during the last two months as a Visiting Professor at the University of Adelaide.

He spent some time at the Division while in Adelaide and also visited the Division of Computing Research at Canberra.

Honour

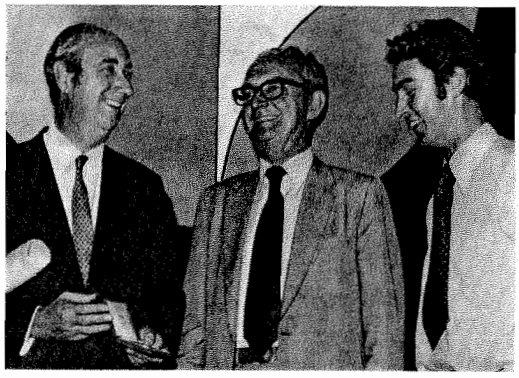
The highest honour of the Royal Australian Chemical Institute, the H. G. Smith Memorial Medal, has been awarded to a CSIRO scientist, Dr D. H. S. Horn of the Applied Chemistry Laboratories. The award is made annually for work in chemical research.

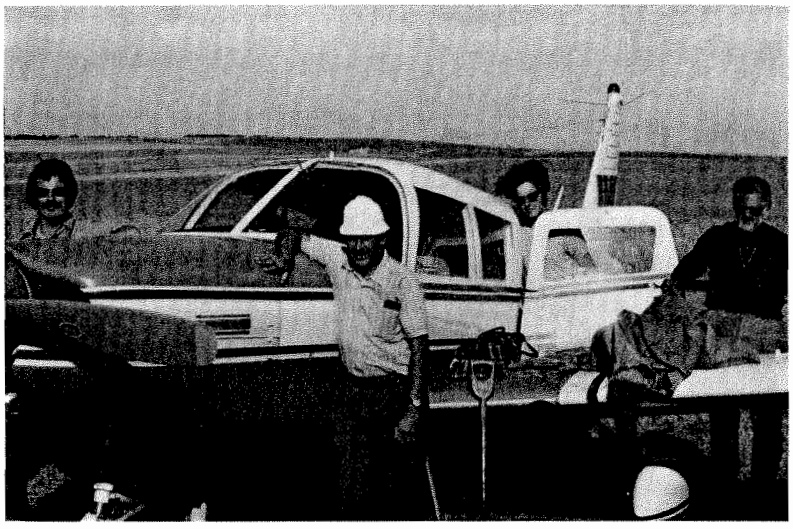
Awards for weather men

Two CSIRO scientists, Dr C. H. B. Priestley (left) Chairman of the Environmental Physics Laboratories, and Dr G. W. Paltridge (right), Division of Atmospheric Physics, had good reason to look as though they were enjoying the occasion — they had just been presented with their international awards from the World Meteorological Organization by Dr W. J. Gibbs (centre), Director of the Bureau of Meteorology in Australia and Vice-President of WMO.

The presentation took place at the opening ceremony of the First Special Assemblies of the International Association of Meteorology and Atmospheric Physics/International Association for the Physical Sciences of the Ocean, held in Melbourne.

Dr Priestley's award, one he holds jointly with a British scientist, Mr J. S. Swayer, Director of Research in the UK Meteorological Office, is the highest international honour in meteorology. He is the first scientist working in the southern hemisphere to receive it. (See Coresearch No. 174.)





Greg Whitehead, Keith Northcote, Bruce Billing and Jack Harris on the ground at Streaky Bay, Eyre Peninsula, to collect soil and grain samples in an investigation of what soil types grow the highest protein wheats.

Soil scientist up in clouds

At the Division of Soils in Adelaide, microbiologist Jack Harris used to be regarded as a 'hazardous insurance risk'.

Not because his work of doing infrared photography from an aeroplane was looked upon as being dangerous in itself, but rather because no one was quite sure what his insurance status was when he was flying with the door of the plane off.

If he fell out, was it due to mishap to the aircraft (covered by insurance) or was it an injury on the ground (not covered)?

To settle the argument Jack eventually had a special door made with a removable window. This could be fitted to any of the light aircraft which he regularly flies, and now he can take pictures in safety and keep both the insurance and the Division's administrative section happy.

Jack first started his work on aerial photography using infrared false colour film in 1969 and since then has saved the Division hundreds of man hours through a technique he developed which allows them to reverse procedure of field trials.

Instead of the conventional way of selecting a site for a field trial in a very even area, then seeing what nutritional deficiencies showed up in crops and pastures when fertilisers were applied, the scientists can now take pictures of the countryside in infrared false colour. The field trial can then be sited in areas where problems show up on the film.

In this way, much time and effort is saved in obtaining samples which show large variations.

'The conditions which show up in the pictures are ones we could not ordinarily see from the ground, nor would they show up in black and white or in ordinary colour photography', Jack said.

'The infrared allows us to see in a spectrum of light important to plant life but which would not otherwise be observed by the naked eye.'

Joint venture

Jack's interest in both infrared photography and flying began when he was working on a joint CSIRO-Cresco Fertilisers project. Along with two of Cresco's staff he had flown to the Yorke Peninsula to carry out field trials.

'If we'd gone in by surface vehicle, it would have taken us ages but because these two men could fly, we could hire a plane and fly around wherever we wanted to go. This cut down our travelling time enormously.

'We started photographing the area first in black and white and colour and then decided to try infrared false colour. We realised then that we'd hit on a technique which allowed us to see so much more than would otherwise have been possible.'

Up until then, such techniques had only been used for looking at diseases and pests in plants and crops. So far as Jack knows it had never been tried before to determine the nutritional aspects of plant life and associated soils.

New technique

Back in Adelaide, he wanted to make further experiments and he and his pilot developed the ideal way to do the work economically.

By flying as slowly as possible, steeply banked in a tight circle at an altitude of less than 1000 ft, and by using an ordinary 35 mm camera with infrared false colour film, he was able to get the desired effect without requiring specialised aerial photographic equipment.

'In those early days the photographer had to be harnessed in because once we removed the door to take pictures there was the chance that when the plane was banked, he could fall out.

'The trouble was the harness also had a quick-release catch on it and on one occasion I accidentally hit mine. After that, we roped ourselves in and tied one end of the rope to the pilot's legs so he'd always know if he'd lost a passenger.'

About this time Jack decided it was expedient to learn how to get himself out of trouble if anything happened to his pilot, and CSIRO met the cost of a 'pinch hitter's' course which gave him tuition in emergency flying and landing.

Trouble shooting

Not content to leave it at that, Jack went on to become a qualified pilot. Since then he has flown himself and other members of the Division thousands of miles with the result that sites for field trials are selected most efficiently from both aerial and ground checks.

During the season, growth in the trials can be monitored in the shortest time and in the most economical way from aerial inspection and photography.

He also did some trouble-shooting on trials that went wrong for colleagues in the neighbouring Waite Agricultural Research Institute and Roseworthy Agricultural College.

Now Jack works in co-operation with them. Each year they supply him with a list of their field sites and plans for new projects and when Jack is flying near one of the areas for the Division, he checks them out by infrared photography.

'We are convinced that by making increased use of light aircraft and of infrared photography,' Jack said, 'it allows us to broaden the scope of our working areas considerably.'

Rotary tour

Rangelands scientist, Graeme Tupper of Deniliquin, has left on a 10 weeks visit to the United States under the sponsorship of Rotary Foundation.

Graeme was nominated for the tour by the Deniliquin Rotary Club and was selected from 13 finalists.

The visit will last about 10 weeks with expenses being paid by the Foundation which provides educational and vocational study programmes for qualified young people in countries other than their own.

While he is in America, Graeme will spend two weeks back on duty for CSIRO when he will take a look at research and methodology related to assessment of range conditions and trends in Texas, New Mexico and Arizona.

Information, please

Clyde Garrow (Manager, Information Service) left Melbourne on 9 March for a month's visit to the USA and UK. He is visiting numerous information agencies in the fields of the environment, toxicology, water resources and solar energy.

Clyde also plans to attend the National Federation of Abstracting and Indexing Services annual conference in Chicago, the national meeting of the Information Industry Association in Washington and the conference of the Institute of Information Scientists at Guildford, Surrey.

Appointment to Executive

Mr V. E. Jennings, B.E., M.I.E. (Aust) of Mt Eliza, Victoria, has been appointed a part-time member of the Executive.

He replaces Sir Henry Somerset who has retired after serving three terms each of three years.

Mr Jennings is the managing director of A. V. Jennings Industries (Aust) Pty. Ltd.

He has been involved in many organisations some of which include the Australian Institute of Urban Studies (Vice-President and Chairman of the Research Committee); the Australian Engineering and Building Industries Research Association (Vice-Chairman); and the Science and Industry Forum of the Australian Academy of Science. He is also a Councillor of the Australian Administrative Staff College.

Senior staff selected

Two new senior appointments have been made by the Executive to the Head Office staff in Canberra.

Mr H. R. Webb has been appointed Assistant Secretary (Environmental Sciences). He will be concerned with the administration of research in the environmental sciences and also be responsible to the Secretary (Agricultural and Biological Sciences) for fostering and maintaining liaison between CSIRO and other research bodies and associations concerned with environmental problems.

Mr Webb joined CSIRO as a member of the Agricultural Liaison Unit which became part of the Agricultural and Biological Sciences Branch.

Recently he has been involved in the organisation of two international conferences, one on grasslands and one on animal production, and he has been secretary of the Animal Production Committee.

The second appointment is that of Dr J. R. Yates who will assume the responsibilities concerned with the administration of research in the Industrial and Physical Sciences Branch and will be responsible to the Secretary (Industrial and Physical Sciences) for fostering and maintaining liaison between CSIRO and other research bodies and associations concerned with physical and industrial research.

Dr Yates was formerly with the Division of Protein Chemistry in Melbourne and for the last 18 months before his appointment was with the Division of Food Research's Meat Research Laboratory at Cannon Hill, Brisbane.

To lecture in Japan

Dr T. D. C. Grace of the Division of Entomology has been awarded a Visiting Professorship by the Japan Society for the Promotion of Science.

The society, established in 1959, sponsors the programme to enable senior foreign scientists to visit Japan to conduct co-operative research with Japanese scientists.

Dr Grace will be in Japan until 1 June and will be working with Professor S. Kitamura, Director, School of Medical Zoology, at the Mie Prefectural University TSU.

He will be mainly concerned with teaching members of Professor Kitamura's group some of the techniques of culturing insect cells with special emphasis on establishing populations of cells that arise from one cell.

He also hopes to visit institutions in Japan which are interested in insect viruses and insect tissue culture, and insect pathology.

Soviet scientists visit CSIRO Divisions

The draft of an agreement on scientific exchanges between Australia and the USSR was initialled at a ceremony during the visit last month of a Soviet mission representing the State Committee for Science and Technology and the Soviet Academies of Science and Agricultural Science.

It is hoped that the agreement will now be formally signed for Australia by the Prime Minister during a visit to Russia later this year.

Members of the Russian mission spent some time with the Chairman, Dr J. R. Price, and Executive of CSIRO at Head Office in Canberra and again in Sydney and also visited a number of the Divisions.

During a luncheon in Canberra, the Russian delegation presented Dr Price with a collection of books.

This was reciprocated by CSIRO before the mission left when Mr A. F. Gurnett-Smith made a gift of a collection of recent publications by officers of the Organization to the head of the delegation, Mr L. N. Yefremov.

Dr L. T. Evans (centre) with members of the Russian science mission at the Division of Plant Industry.

Staff of the Division of Mechanical Engineering at Highett relax in the grounds at a barbecue following the week-long solar energy workshop. Guests included visitors from the United States and Australian universities and industry. Earlier in the week the visitors were entertained at a dinner at the Division's cafeteria.

Scientists to collaborate on solar energy studies

Forty American and Australian scientists and engineers sat round a table at the Division of Mechanical Engineering last month and talked solar energy from about nine o'clock in the morning until five-thirty in the evening for five days.

And most of them continued with the same subject during the evenings, morning and afternoon tea breaks and lunch as well.

While Melbourne gave the overseas visitors a good indication of its 'unprocessed' solar heat, the men discussed every aspect of the subject from the application of it at low temperatures up to 120°C to the United States programme aimed at generating electricity from solar energy.

Co-ordinating the Australian group was Mr Roger Morse, CSIRO's Director of Solar Energy Studies, and just to confuse the issue, the co-ordinator of the American team shared the same surname — he was Dr Frederick Morse.

The object of the workshop, staged under the US/Australia Science Agreement, was to define areas where the two countries could effectively collaborate in their research and development programmes and in this they achieved considerable success.

Although it was too early to spell out specific projects, the participants were able to identify common interests which could benefit from mutual support.

Talking after the week's events, the two co-ordinators said these included computer models of thermal processes such as the heating and cooling of buildings, the heating of water and low pressure steam generation.

The models were powerful aids for the design of installations and the development of improved components, they said.

Other projects included special surface treatments of absorbing surfaces, the drying of agricultural and forest products and the problems of thermal storage.

In the field of renewable fuels, the use of plant material grown specially for conversion to fuel was an area which was recognised as having great potential and one in which Australia's strength in agricultural research could make an important contribution, the scientists agreed.

The USA has a large programme aimed at generating electricity from solar energy. This was of interest to Australian scientists and engineers who identified potenial applications in Australia.

'Several of these areas could serve as the basis for co-operative projects,' they said.

The scientists also discussed ways of increasing the transfer of information and hope that they will be able to have exchange visits among researchers in the various fields of solar energy utilisation.

Appointment

Dr R. W. R. Muncey, Chief of the Division of Building Research, Highett, has been elected President of the Victorian Institute of Colleges, succeeding the retiring President, Sir Willis Connolly.

(The VIC is a state authority established in 1965 to co-ordinate and develop tertiary education within the framework of those colleges affiliated with it. It represents an alternative system of education to that provided by the universities.)

New journal

A new scientific publication, 'Australian Journal of Plant Physiology', made its appearance last month.

Printed quarterly by CSIRO it will fit into the series 'The Australian Journals of Scientific Research', and is available through CSIRO libraries.

The journal will publish original research in all aspects of plant physiology.

Record flight

David Tongway, an analytical chemist from the Rangelands Research Group at Deniliquin, has won the Wakefield Trophy for rubber powered free flight model planes at the national championships held at Amberley Air Base.

There were 12 entrants in the event.

In winning the trophy, David's model had a flight of 1253 seconds out of a possible 1260 seconds, establishing a new Australian record.

The championships attracted 170 competitors from all States and are used as a guide for selection of the Australian team to compete against New Zealand in October in New Zealand.

As the winner of the trophy, David will be an automatic selection in the Australian team for the third successive time.

Obituaries

CSIRO loses two of its personalities

The deaths have occurred in recent weeks of two people who have had a long association with CSIRO.

One was Dr Wilfred W. Bryan of Brisbane, a leading agricultural scientist, and the other was Dr Barrie Dawson of the X-ray Diffraction Section of the Division of Chemical Physics, Melbourne.

Dr Bryan, who was originally with the Division of Plant Industry and who later transferred to Tropical Agronomy, specialised in plant breeding and tropical pasture development.

His work over 40 years was recognised by the University of Queensland which awarded him his doctorate in agricultural science. He was also a Fellow of the Australian Institute of Agricultural Science.

At Gatton Agricultural College he produced a hybrid maize which gave a 20 per cent increase in yield.

During his association with CSIRO Dr Bryan played a major role in developing tropical pastures in the coastal lowlands of southern Queensland.

Dr Dawson graduated in chemistry from the University of Melbourne in 1945 and then took his Ph.D. at Cambridge as a CSIRO senior student.

He joined CSIRO in 1950 and gained a high international reputation through his contributions to diffraction studies of atomic and molecular structure.

Dr Dawson was also noted for his pioneer approach to structure analysis which provided a new insight into the chemical bond.

Adelaide scientists and teachers who are sharing in the educational venture include (from left) Mr Colin Raison, Ms Pam Balard, Mr Richard Merry and Dr Kevin Tiller (both from the Division of Soils) and Dr David Lloyd.

SA education project

The Division of Soils in Adelaide has come to an arrangement with the Chemical Education Committee of the Royal Australian Chemical Institute to encourage high school teachers to informally participate in scientific research.

The programme will allow teachers to gain a better insight into the planning and techniques of scientific research and to have a better knowledge of their own particular spheres of interest.

Still in its infancy, the project is expected to run through this year and next on a part-time voluntary basis. Initially, it will include three science teachers from Oakbank Area School in the Adelaide Hills who will participate in a study of the cycling of some metals in the native plant-soil system.

Working under the supervision of Dr K. G. Tiller from the Division, the teachers also want to further their knowledge of the ecology of selected native plants in the region.

It is hoped that the programme will be of benefit to all concerned — the teachers, students and CSIRO.

LONDON LOG

In seeking information on the trend of UK science in areas of particular interest to Australia and in relation to questions posed by our colleagues at home, some of us at ASLO make fairly frequent visits to scientific establishments, in and out of London.

One such visit was made recently to the Nature Conservancy at Monks Wood Experimental Station near Huntingdon.

Since its establishment in 1949 this experimental station has been advising on nature conservation and the management of nature reserves and also conducting research.

As from November it was planned to remove the conservation work but to continue the research as part of a new unit with the Natural Environment Research Council to be known as 'The Institute of Terrestrial Ecology'.

The excursion to Monks Wood coincided with its Open Week and the place was swarming with visitors, especially students from secondary schools. Obviously the station is a great attraction.

Young people everywhere were filling in quiz forms to test their understanding of the exhibits, or checking their biological knowledge by attempting to identify the trees, plants, mammals and insects among the many illustrations and specimens on display.

In the various laboratories displays dealt with toxic chemicals and wildlife, lowland grasslands, invertebrate population ecology, woodland management, the British Antarctic Survey and biological records. The last-named activity provides an excellent point of contact between professional and amateur naturalists, ecologists and conservationists in the UK.

For good measure a well-documented mile-long nature trail running through the National Nature Reserve at the station was open to visitors, and the Director was occasionally to be seen extracting from his pocket a real live mole, which had been used in feeding experiments earlier in the day.

Should we in CSIRO be making more effort to communicate with the public by such means? — F.G.L.

Encephalitis virus

Cont'd from page 1

Darling and Macquarie Rivers. At the Macquarie marshes, their success was a little overwhelming.

'In a one-night stand at a particular billabong there,' he said, 'we isolated 13 different viruses. Some of them were new and unnamed and are still being investigated.'

'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.

Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478 or Wendy Parsons, 48 4227.

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SCIENCE POLICY UNDER REVIEW

OECD panel looks at activities in Australia

A three-man panel from the Organisation for Economic Co-operation and Development (OECD) has completed the first stages of a review of science and technology in Australia.

Following its arrival in Australia on 25 March, the panel which comprised Dr Alexander King, Dr Frederick Schneider and Dr J. Wautrequin, spent three weeks of intensive discussions with a wide range of organisations which are involved with science and technology in this country, including both Federal and State government departments, CSIRO, universities, groups from industry, professional associations, the Australian Academy of Science, and representatives of medical research organisations.

Meetings were held in Sydney, Melbourne and Canberra and an assessment meeting was held in Canberra on 18 and 19 April.

The request for an OECD review was initiated by the Minister for Science, Mr W. L. Morrison, last October.

At that time, Mr Morrison said that Australian scientists and technologists had made notable contributions in the past to national goals. A number of them had achieved world prominence in their particular fields.

The Australian Government, he said, would continue to support the efforts of the people involved in this work but wished to see more of their effort in the future being turned to social and environmental problems.

It was timely that Australia should make a critical appraisal of the broad aims of its scientific and technological efforts for the next decade or two — the OECD had already assisted other countries with similar studies and its experience would be invaluable to Australia.

'At present about one per cent of the GNP, or $405 million is spent annually on research here. With more than 5000 professional employees engaged in scientific research, the way we use science should be analysed and a co-ordinated plan developed for the wise use of our intellectual resources', the Minister said.

The Government would not be relying solely on the advice of these overseas experts in developing its policies, Mr Morrison added.

Special edition

This month's issue of 'Coresearch' is a special eight-page edition to give staff a full account of the OECD review, the new Animal Health Laboratory and other activities currently being undertaken by CSIRO.

However, an impartial scrutiny of Australia's present situation and possible future needs made by independent experts would be of considerable value.

Science Council

Mr Morrison gave a further outline of the Government's thinking on science and technology when he tabled in the House of Representatives in

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The panel

- Dr Alexander King, CBE, who holds the degree of Doctor of Science, was formerly Director General in the OECD Directorate for Scientific Affairs in Paris, but has recently retired from this position. Dr King has participated in OECD reviews of science policy in both Iceland and Canada.
- Dr Frederick Schneider is the Director General of the Max Planck Society in Germany. A lawyer by training, he is very knowledgeable on science policy issues and was a member of the OECD Panel of Examiners which reviewed the science policy of Switzerland and Sweden.
- Dr J. Wautrequin is a Belgian. He heads the general technology and nuclear section of the planning division on science policy of the Prime Minister's Department in Brussels and has a degree in economics and a doctorate in law.

Dr J. R. Price, Chairman of CSIRO, and members of the OECD panel relax during a luncheon at Head Office. From left, Dr J. Wautrequin, Dr Price, Dr Frederick Schneider and Dr Alexander King.

Team has full day at Head Office

The itinerary of the OECD panel allowed for a full day to be spent at Head Office in Canberra where discussions were held with the Executive and senior members of the Secretariat.

These were led by the Chairman, Dr J. R. Price, who called on each of his Executive colleagues and other officers present to deal with the different aspects of the Organization's activities under review as they arose.

Topics with which the panel were particularly concerned included the way CSIRO established its research priorities and the Organization's attitudes to national and scientific goals and needs.

The team asked questions about the methods of research management, particularly program budgeting, scientific staffing and support staff.

The decentralisation of laboratories was looked at and the panel questioned whether this resulted in problems of communication within CSIRO and to and from industry.

The team sought information about the Organization's relationships with universities, industry and with medical research and asked how CSIRO viewed the role of social scientists and the Organization's involvement with environmental matters.

It also explored the balance between pure and applied science, and patents and licensing policy and asked for CSIRO's views on the proposed Australian Science Council.

Later when the more formal aspects of the day were completed, members of the panel had a chance to talk to the Executive and Secretariat in a more informal way when they were entertained at a dinner at University House.

Discussing the meeting afterwards with 'Coresearch', the Executive Officer, Dr J. A. Allen, commented that the Organization had been well prepared for the review both in relation to the searching questions which were asked and to the documentation it had assembled for the occasion.

The latter had included 'CSIRO Australia' and 'Achievements of CSIRO', which were specially written to supplement the Background Document on 'Science and Technology in Australia' prepared by the Department of Science.

This Background Document, Dr Allen explained, formed an important part of the OECD investigation of each country reviewed. Normally it was prepared by the OECD itself but on this occasion it had been

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Co-operation is name of game

The letters OECD stand for Organisation for Economic Co-operation and Development.

It was founded in 1960 as a successor to the Organisation for European Economic Co-operation (OEEC) which had been established in 1948 to administer Marshall Plan Aid among various European governments and to promote co-operation among them in the urgent task of restoration after World War II.

The organisation was reconstituted in 1961 and began its new role, widening its objectives to take its sphere of influence and work outside the confines of Europe. More recently, Finland has become a member, as has Japan, and New Zealand.

Australia joined the OECD as a full member in 1971.

The Organisation is primarily concerned with international economic co-operation and development.

Its main objectives are to promote policies designed to achieve the highest sustainable economic growth, to raise living standards in member countries and to contribute to the expansion of multilateral trade.

Apart from undertaking to promote these policies, member countries agree to

- promote the efficient use of their economic resources
- promote the development of their resources, encourage research and promote vocational training in the scientific and technological field
- pursue policies designed to achieve economic growth and internal and external financial stability.

Dr Frederick Schneider of the Max Planck Institute (left) discusses an aspect of CSIRO's policy with two members of the Executive, Dr A. E. Pierce (centre) and Mr V. D. Burgmann.

Davies laboratory opened in Townsville

The Division of Tropical Agronomy's new Davies Laboratory at Townsville was officially opened on 28 March.

The complex, which will encompass the old Townsville Laboratory and considerable extensions, has been built at a cost of $700,000 and will house the Townsville staff of the Divisions of Tropical Agronomy, Soils, Animal Health, Mechanical Engineering, Animal Physiology, Entomology, Mathematics and Statistics, and Computing Research.

Sir Arthur Coles, one-time member of the CSIRO Executive, unveiled the plaque and spoke of his long association with Dr Griffiths Davies, the foundation Chief of the Division after whom the laboratory has been named.

J. Griffiths Davies was often called the father of Australian agrostology because of his 40 years work dedicated to improving grazing pastures, especially in northern Australia.

He was responsible for establishing the Division of Tropical Agronomy in Brisbane, as well as its Townsville laboratory, and had begun planning the new extensions when he died in 1969.

Among the 200 guests at the opening ceremony were Ms Davies, Dr Davies' widow, the Chairman, Dr J. R. Price, and Dr A. E. Pierce, a member of the Executive.

The laboratory was opened for two days and more than 2000 members of the public, including 500 high school students, visited the site to inspect the equipment and displays of the various CSIRO Divisions.

Research programs at the Davies Laboratory are aimed at the areas north of the Tropic of Capricorn which receive an annual rainfall of more than 500 mm.

Most of the region comprises what is known as the dry tropics where the rain falls mainly in the hot summers and where the good growing season is followed by a long dry one with little or no rain.

Seven of the eight Divisions represented at the Davies Laboratory are directly concerned with research designed to increase animal production from these northern Australian pastures.

For the Division of Tropical Agronomy, the major disciplines of plant introduction, plant nutrition and plant chemistry support a team of research workers in pasture agronomy and ecology.

The Division of Soils is largely concerned with basic soil studies of the major tropical and sub-tropical soils, as well as applied soil science.

Research is undertaken by four specialist groups: pedology and soil survey, soil chemistry and fertility, soil zoology, and soil physics-hydrology.

The work of the Townsville research team of the Division of Animal Health is mainly centred on the cattle tick (*Boophilus microplus*) and the diseases it transmits, while the Townsville section of the Division of Animal Physiology is mainly concerned with the growth rate and reproduction of cattle grazing various native and introduced pasture species.

The Division of Mechanical Engineering also has a team at the Davies Laboratory concerned with developing, testing and evaluating equipment designed to operate in hot conditions.

The Division of Entomology is represented at the laboratory by its dung beetle and termite research projects.

Service functions to all groups are provided by staff from the Divisions of Mathematical Statistics and Computing Research. These groups also have their own research projects.

Mr R. F. Isbell, Regional Soils Officer (left), Ms K. Back, Dr K. Back, Vice-Chancellor of the James Cook University and Ms K. Davies (widow of the late Dr J. G. Davies) examine a soil survey display at the official opening.

The Chairman, Dr J. R. Price, Ms E. M. Hutton, wife of the Chief of the Division of Tropical Agronomy, Dr A. E. Pierce, a member of the Executive, and Mr L. A. Edye, officer-in-charge of the Davies Laboratory, examine a display in the soil survey section at the opening.

S. I units explained

It's just possible that there are some members of CSIRO who are not yet aware that a reciprocal kelvin is an international unit for a thermal coefficient of expansion.

There could still be those who are not quite certain of what a henry is — or a weber, tesla or a pascal, even.

In which case the Editorial and Publications Service can help you.

They have copies of a publication entitled 'International System of Units', and it's available to anyone interested from the Editorial and Publications Section, 372 Albert Street, East Melbourne.

CSIRO to produce new research newsletter

The Central Communication Unit plans to publish, in the near future, a monthly research newsletter on the work of CSIRO.

This will complement its staff publication, 'Coresearch'.

The newsletter will report on all CSIRO activities, including important developments in ongoing research programs. It will be written in lay language and will be made available to interested people in government, industry, the news media, secondary schools and universities.

The Manager of the Central Communication Unit, George Williams, said that 'The newsletter is a manifestation of the growing recognition within CSIRO that, in addition to keeping the scientific community and industry informed, we also have a responsibility to make a much greater effort to keep the public informed.

'Scientists have tended to be reticent about speaking to the press,' he said, 'either out of modesty or from fear of being misrepresented. As a result, the large bulk of CSIRO's work never sees the light of day so far as the public is concerned.'

George said that the Central Communication Unit had been allotted an increase in staff to help it do its part in ensuring that a fuller, more accurate and more balanced picture of CSIRO was presented to the public in future. The new newsletter represented an important step in that direction.

The newsletter will be edited by David Peace, a former Australian journalist who recently returned to Australia after a number of years' experience in Canada as Associate Editor of 'Modern Power & Engineering' magazine, Technical Editor with the public relations department of Hydro-Quebec and Special Projects Officer with the public relations division of Ontario Hydro.

Chairman to visit USSR

The Chairman, Dr J. R. Price, is to visit the Soviet Union next month at the invitation of the Chairman of the State Committee of the USSR Council of Ministers for Science and Technology.

His tour, which is expected to last between 10 days and a fortnight, has been arranged to coincide with the visit of the Prime Minister, Mr Whitlam, who is expected to be in Moscow mid-June to sign the USSR/Australia Science Agreement. Dr Price has been invited to be present at that ceremony.

New appointment

Mr Michael Tracey, Chief of the Division of Food Research, Sydney, has been appointed Titular Member of the Food Section of IUPAC (International Union of Pure and Applied Chemistry).

Appointees are eminent people in food science and Mr Tracey is the first Australian to be given the honour of membership.

He will attend a meeting of the Union in Warsaw in July.

Bernie Bindon may get 'mum of the year'

CSIRO may become the owner of the New South Wales 'super mum of 1973' if Dr Bernie Bindon of the Division of Animal Genetics can persuade her present owner, Mr Clem Williams of Little Hartley, near Lithgow, to part with her.

It would all be in the interests of science, agriculture and Australia and all that.

Mother, as the seven-year-old cross Hereford cow is appropriately named, has already presented her owner with four sets of twin calves and followed that feat with a set of triplets.

Mr Williams wants to keep her for at least another year to see what her performance might be the next time round, but says he may let Bernie have her after that.

In the meantime, Mr. Williams has sold the Division one of Mother's bright young bull calves and he'll be given his chance to see if his mother taught him those things a mother ought to teach her son.

Bernie's interest in animals that have proven records of multiple births stems from the project the Division is at present engaged on which has the aim of developing cattle which regularly have twins.

This, the scientists hope, will provide a way to increase Australia's cattle population, particularly in the southern part of the country.

When publicity was given through the media at the end of last year to the Division's quest for cows which had produced twins, Bernie received more than 100 letters from farmers.

'And it was a coincidence that three of the cows with the best records—one had had six sets of twins in a row—all had the name Williams', Bernie told 'Coresearch'.

'A number of replies came from people whose cows had had only one set of twins but we're looking for those which have had at least two sets. However, we've written to everyone asking them to let us know what the animals produce next time so we can keep a watch on them.'

Because the project last financial year was only at the pilot stage, not much money was around for buying many of the animals offered, but 30 cows have now been purchased and it is hoped to increase the number to 200 as more funds become available.

Two that were bought had produced triplets at their first attempts at motherhood and the others had had at least two sets of twins.

The bulls for the project are being chosen with equal care and apart from Mother's son, Bernie has been able to buy one belonging to a Victorian farmer who has been engaged privately on a scheme that is not unlike the Division's. This bull has a history of siring twins.

Twinning is a comparatively rare occurrence in cattle and the Division wants to find out why some at least have multiple births in the hope that they can develop methods which will increase the percentage of cows which will give birth to twins.

Mother, the 'super mum of the year for 1973', believes in doubling her troubles.

Animal specialist appointed to head Indonesian laboratory

Dr L. J. Lambourne, who until 1971 was officer-in-charge of the Division of Animal Physiology's Beef Cattle Research Unit at the Cunningham Laboratory in Brisbane, has been appointed to head the new Animal Husbandry Research and Development Centre at Ciawi near Bogor in Indonesia.

Dr Lambourne, who gained his degrees of M.Sc. and Ph.D. at the Victoria University in Wellington, New Zealand, is at present employed as a specialist in animal husbandry for the joint International Bank for Reconstruction and Development/Government of Spain agricultural research project at Badajoz near the Spanish-Portuguese border.

He first joined CSIRO in 1957 when he went to the Division of Animal Health and Production (later to become Animal Physiology) at Armidale.

Before then, he had been manager of a number of New Zealand sheep and cattle stations and a research officer at the Ruakura Animal Research Station in that country.

From 1962 to 1964 he was a research scientist at the Grassland Research Institute at Hurley in the U.K. and then returned to Animal Physiology the following year, this time to be stationed at the Cunningham Laboratory where he remained until his 1972 appointment with the IBRD.

Dr Lambourne expects to arrive in Canberra this month to take up his appointment but will not go to Indonesia permanently until the new $4.5 million laboratory in Bogor is built.

Planning for this is now well under way and it is hoped that construction will start towards the end of next year.

It is expected, however, that Dr Lambourne will visit Indonesia several times before the building is completed and he may make his first tour this month while CSIRO's foreign aid administrative officer, Geoff Wines, is there.

Seminar

The laboratory's Advisory Council, which comprises representatives of the Indonesian and Australian Governments, held its first meeting in Jakarta on 22 March.

CSIRO was represented by Mr A. F. Gurnett-Smith and Dr K. A. Ferguson, both of whom delivered papers at a two-day seminar which preceded the Advisory Council meeting.

Entitled 'Research and Animal Production Development in Indonesia', the seminar provided an opportunity for Indonesian scientists to discuss the problems of their country's animal industry and to suggest areas where the research resources of the new laboratory could be effectively applied.

Written papers were submitted by leading animal husbandry scientists and economists from the government agencies and universities at Bogor, Bandung and Yogyakarta.

These documents will be bound and presented to the library of the new laboratory as a basis for planning the research program.

Dr John Philip elected to Royal Society

Dr John Philip, Chief of the Division of Environmental Mechanics in Canberra, is one of two Australians recently elected to Fellowship of the Royal Society of London.

The other is Professor D. R. Curtis, Professor of Pharmacology at the Australian National University.

Dr Philip becomes the eighth FRS currently on CSIRO's books. The others are Sir Otto Frankel (Senior Research Fellow, Plant Industry), Dr C. H. B. Priestley (Chairman, Environmental Physics Research Laboratories), Dr D. F. Waterhouse (Chief, Entomology), Emeritus Professor E. J. Underwood (Part-time Executive member), Dr A. Walsh (Assistant Chief, Chemical Physics), Dr J. P. Wild (Chief, Radiophysics), and Mr J. G. Bolton (CRS, Radiophysics).

His election to the Royal Society recognises his pioneering applications of physics and mathematics in research on flow and transport in soils and porous media, in plants and in the lower atmosphere.

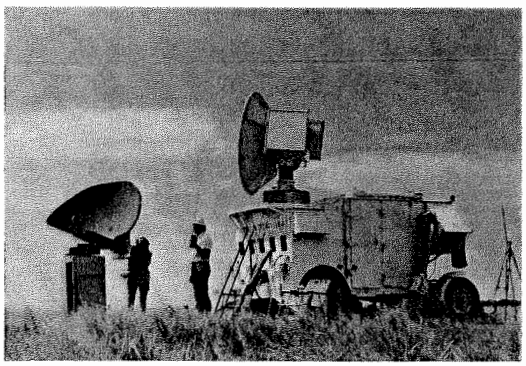
Dr Philip's association with CSIRO goes back to 1947 when he worked on the hydraulics of furrow irrigation at the Irrigation Research Station at Griffith.

He joined the research staff of Plant Industry in 1951, moving from Deniliquin to Canberra in 1959.

He was an Assistant Chief of Plant Industry from 1963 till 1971, when he became first Chief of the new Division of Environmental Mechanics.

Dr John Philip

Balloon-assisted take-off for ACT insects



Members of the Division of Entomology staff tracking locusts at a field station near Narrabri in northern New South Wales.

Hundreds of plague locusts, migratory locusts and spur throated locusts, along with dragonflies, butterflies and grasshoppers, have been flying for science and humanity in the last few weeks.

Released into the air from radiosonde balloons, the insects have taken off into the air above Black Mountain in Canberra as part of a joint project carried out by CSIRO's Division of Entomology and COPR (Centre for Overseas Pest Research), an organisation based in London.

For a long time now, COPR and CSIRO have been co-operating on the locust problem and the latest experiments were part of their efforts to control plague locusts and other similar pests.

The insects were sent aloft for their scientifically-assisted take-off to heights ranging from about 100 to 300 metres. Their cages were then opened on radio command.

As each type of insect was liberated, its flight path was followed by a telescope trained along the same axis as a radar receiver.

The researchers recorded the microwave returns from the various species of insects to test the hypotheses that radar can be used to identify different insects through their wing beat patterns.

If these patterns can be established it will be possible for radar units to clearly identify movements of such insects at night and give good estimates of their direction and even their number.

Obituary

It is with regret that the death of Ms Diana Miller, a former senior clerk of the Meat Research Laboratory of the Division of Food Research, Brisbane, is reported.

Ms Miller died in a hospital at Stockport, England, in January while on an overseas trip.

Ms Miller joined the former Division of Food Preservation in 1960 and was one of the few remaining staff members who had worked in the original laboratory located at the Brisbane Metropolitan Abattoirs.

She had had an ambition to travel for a long time and resigned from her position with the Division in September to do so.

Heavy demand for CSIRO films for overseas use

The Film and Video Centre has a heavy program on its hands at the moment coping, not just with the normal demands for Australia audiences, but with many requests for overseas distributions.

This year a number of films will be sent to China, some of which are expected to be used during the staging of the Australian Trade Fair in Peking in October.

Two of these are documentaries on beef and dairy cattle breeding experiments in Australia, the beef cattle one featuring work at Belmont and the dairy cattle one showing a project at Badgery's Creek.

Since 1954 the Centre has made a practice of keeping film footage of the Belmont experiment, and it is this material which has now been edited and prepared for the film.

'The fact that we're now able to produce this shows the value of recording what's happening with projects throughout the various stages of progress,' the officer-in-charge of the Centre, Stan Evans, commented.

'At the time it may not be all that obvious what use the footage will eventually be put to, but unless we record things as they happen we have no way of getting this material at a later date when a need does show up, as has happened in this case.'

Another of the films for the Fair shows the project involving the purification of waste water at the Lower Plenty Sewage Works in Victoria and includes some footage on an application of Sirotherm.

Yet another will be a specially prepared version of the 1968 film, 'Tropical Pastures for Australia', and there have also been requests for 'Flight Line One', 'Dung Down Under', 'Shrinkproofing Wool' and 'Nitrogen Fixation by Legumes'.

In addition to the ones required for the Fair the Department of Overseas Trade has requested the Centre to supply the Australian Trade Commissioner in Peking with a series of about 30 CSIRO films which cover a wide range of the Organization's activities—from the project on bovine contagious pleuropneumonia to solar water heating.

These are being dispatched over a period of several months and as Stan says, 'Together with those wanted for the Australian Fair they make our distribution to China a major project.'

Japanese interest

But if there's interest in our documentaries from China, Japan is not far behind and the Centre has had requests for two —'The Penguins of Macquarie Island' and 'The Seals of Macquarie Island'—from Interlingual Television KK of Japan.

The company has been negotiating for the use of the films to include them in a wildlife series which also make use of some episodes from the ABC program, 'Wildlife Australia'.

Mauritius TV

From Mauritius have come requests for the use of a number of the Centre's films. This followed negotiations with the Mauritius Broadcasting Corporation through the Australian Department of Overseas Trade.

Most of these have featured Australian wildlife and have included documentaries on kangaroos, echidnas, the superb lyrebird and the mallee fowl.

The program they are used in is hosted by an entomologist, Dr A. Orian, who has commented that the techniques used by CSIRO in some of them has been 'of a very high standard and generally better than the best scientific films screened on TV'.

Following the showing of the tagging of Australian salmon, insect tissue culture and the muttonbirds of Bass Strait, he wrote:

'Judging from the large number of requests, we reckon that the whole TV audience in Mauritius is looking at the films.'

The films sent to Mauritius were not used solely for television, but were also screened to scientific and technological associations and to university and to high school students.

The NBC networks in both Canada and the United States have used the Macquarie Island seal and penguin films and Trans-Tel in Germany included footage from 'Storms on the Sun' in one of their series.

Best seller

'Birth of the Red Kangaroo' continues to be a best seller with excerpts from it being included recently in series made by the BBC, by Ivan Tors in his 'Encyclopedia of Animals' (a production made in Munich), by Educational Aids Development, Tokyo, in their series 'Hopping Around the World' for release in Japan, and by Radio Diffusion-Television Francaise in Paris which also included footage from 'The Echidna'.

Nearly 300 prints of the kangaroo film have now been distributed throughout the world.

Paul Grant for LEF Office

Mr Paul Grant of the Patents and Licensing Group at Head Office, has been elected the first president of the Licensing Executive Society (Australia).

Paul, who is Assistant Secretary in the I and P Sciences Branch, will hold the office at an important stage of the society's history in Australia.

The Australian society was established at a congress held in Sydney in March. It is now part of the LEF International which aims to raise the professional standards of the licensing and transfer of technology.

The inaugural meeting was attended by nearly 100 delegates including the presidents of LEF (Japan) and LEF (United States), the president-elect of LEF International and members of LEF (France).

$56 million laboratory for Geelong

The Australian Government last month approved the building of a $56 million Animal Health Laboratory at Geelong, Victoria. The decision followed a joint Cabinet decision by the Ministers for Science, Health, Primary Industry, and Northern Development. The laboratory, which will be administered and operated on behalf of the Australian Government by the CSIRO Division of Animal Health, will provide a valuable insurance against the devastating effects that the accidental introduction of an exotic livestock disease, such as foot and mouth disease, could have on Australia's animal industries.

In 1972-73 these industries had an estimated gross value of production of $3000 million. In the same year the industry's exports were worth an estimated $2000 million.

The principal functions of the Animal Health Laboratory are the diagnosis of exotic diseases of livestock (mainly virus diseases), the testing of vaccines required for exotic disease control, research on indigenous virus infections of animals, and the production of foot and mouth disease vaccine if required.

When fully operational the laboratory will employ a staff of 170 including 25 scientists. Annual running costs will be in the order of $3 million.

Construction is expected to begin in 1976-77 and will be spread over five years.

The laboratory complex will be technically the most sophisticated major structure in Australia and the most modern animal diseases laboratory in the world.

Need for an Animal Health Laboratory

There are many major livestock diseases exotic to Australia which, if introduced, could have devastating consequences for our livestock industries and for the economy in general.

The quarantine service operated by the Department of Health has so far proved a remarkably effective barrier against the accidental introduction of these diseases, but no quarantine service, however efficient, can hope to provide forever an absolute guarantee against their entry.

Although a number of exotic diseases have considerable potential for harming our livestock industries, Australia has most reason to fear foot and mouth disease.

The effect of an outbreak of this disease on livestock production would be seriously damaging, its effect on trade would be disastrous; much of our overseas trade in livestock products would be brought to a standstill overnight.

Moreover, the suspension of trade would remain not merely until the disease was eradicated, but until such time as Australia was able to prove this to the complete satisfaction of its trading partners.

In the event of a major exotic disease entering Australia, veterinary authorities would be severely handicapped by the absence in this country of a laboratory with a great enough degree of microbiological security to enable highly infectious material to be handled without any danger of the disease agent escaping and causing further outbreaks.

Such facilities, which exist in all of the countries constituting the principal export markets for our livestock products, can play an important role in the initial diagnosis and are absolutely essential for the enormous amount of diagnostic work associated with eradication campaigns.

Should vaccination be adopted for control and eradication, maximum-security facilities would be essential for testing the potency and safety of the vaccines used.

Moreover, if it became necessary to vaccinate livestock against foot and mouth disease, maximum-security facilities would be required both for the production and testing of a suitable vaccine.

Although eradication may be achieved in a matter of days or weeks, an extensive testing program would be required for some considerable length of time afterwards to demonstrate that the disease had been eradicated.

This testing can only be carried out in a maximum-security laboratory and the absence of such a laboratory in Australia could seriously prejudice any chances of an early resumption of overseas trade in livestock products.

The Department of Health is currently investigating the establishment of a quarantine station on an offshore island so that livestock can be imported into Australia to improve the productivity of our animal industries.

If the station is to draw livestock from countries where diseases such as foot and mouth, rinderpest and bluetongue are endemic, separate maximum-security laboratory facilities must also be provided in which special tests can be carried out to ensure that livestock held at the station are completely free from exotic diseases before being allowed entry to Australia.

Finally, a maximum-security laboratory would, in addition to facilitating the importation of livestock and acting as an insurance against the introduction of exotic diseases, provide a valuable and much-needed facility for research on virus diseases already endemic in Australia. Research on these viruses, several of which affect man as well as livestock, has been hampered to date by a lack of a maximum-security laboratory.

Because of the inadequacy of our knowledge of endemic diseases, virologists would, in many situations, be unable to differentiate quickly between an endemic and an exotic disease. Any such delay in diagnosis could have severe economic repercussions.

Feasibility study

Growing awareness of the dangers and consequences of a major exotic disease penetrating Australia's quarantine barriers led, in the late 1960s, to a series of proposals to establish an animal health laboratory with a high degree of microbiological security in which highly infectious material could be handled in complete safety without risk of escape.

In 1970 a five-man Proposal Evaluation Team (PET), comprising virologists, architects and engineers from CSIRO, the Department of Health and the Department of Housing and Construction was set up to determine the feasibility of establishing a maximum-security laboratory and to estimate the approximate cost of building and operating it.

PET was led by Mr Bill Snowdon, a virologist with the Division of Animal Health.

The other CSIRO member of the team was Mr John Dunn, Chief Buildings Officer, Head Office.

Late in 1970 PET visited laboratories in America, England, Belgium, Holland, Germany and Italy which operated under varying degrees of microbiological security.

The team was able to inspect facilities, evaluate methods of microbiological containment, and have discussions with people who had already planned, designed, constructed and operated similar facilities.

Although these laboratories had many features of interest, none of them provided a wholly satisfactory model for the construction of a laboratory that would meet all the particular requirements of Australia.

PET found, therefore, that to carry out an adequate feasibility study and prepare a reasonably accurate estimate of costs, it was necessary to go a good deal further than was originally envisaged and to prepare a design for an Animal Health Laboratory in some considerable degree of detail.

This involved obtaining information that would enable it to define realistic standards of microbiological security and to determine the engineering and structural systems that would enable these standards to be met.

PET's findings and recommendations were published as a six-volume report in August, 1972.

In this, PET concluded that it would be both feasible and practicable to construct in Australia an animal virus laboratory in which stringent security conditions coupled with fail-safe procedures would ensure that there was no risk to our livestock population, even in the event of a malfunction developing in the laboratory.

In addition to setting out the costs of establishing and running such a laboratory, the report contained detailed designs on which the preparation of working drawings and tender documents could be based.

The designs incorporated the best features of the overseas laboratories inspected by PET together with other advanced techniques of microbiological security.

Although the cost of the laboratory was high in comparison with a conventional laboratory, PET considered that it represented the most economical and practicable way of providing for the defined functions and of achieving the required levels of microbiological security with present-day technology.

Choosing the site

The Geelong site, currently the Geelong Rifle Range, was chosen following extensive consideration of a wide range of alternative sites.

The final choice was made on the advice of the Cities Commission in the light of the Government's policy of developing specific growth centres and with the approval of the Victorian Government.

A comprehensive environmental impact statement for the site accompanied the Cabinet submission.

The Department of the Environment and Conservation which assessed this statement noted the amount of technical detail supplied and advised that it was satisfied that the environmental issues of the proposal had been adequately covered.

Security

Because of the extreme precautions built into the design, there will be no risk to Australian livestock.

The laboratory complex will operate as a series of integrated engineering systems which provide isolation from the external environment.

It features multiple fail-safe devices and procedures including air locks, shower locks, filter systems of many kinds and sophisticated waste disposal apparatus.

All air entering or leaving the laboratory will be specially filtered.

The air leaving the high hazard area will be heat sterilised to kill virus particles.

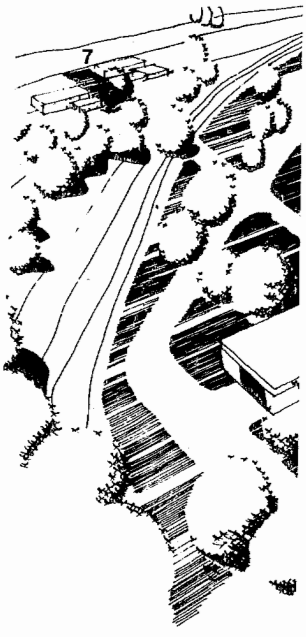
Solid wastes will be destroyed or rendered sterile.

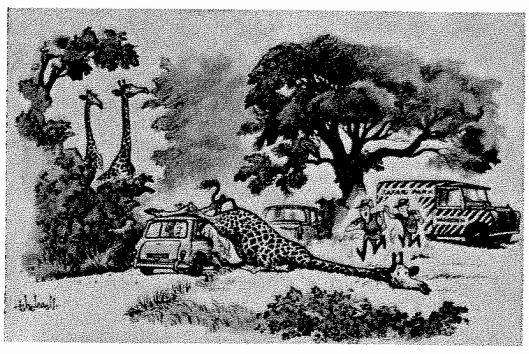
Operation of the complex will have no detrimental effects on the environment.

In accordance with overseas practice, the keeping of susceptible livestock will not be permitted in a buffer zone one mile in radius around the laboratory.

This will include sheep, cattle, pigs, goats, horses, fowls, turkeys, geese and ducks. Dogs and cats will be permissible.

The Victorian Government has agreed to the relocation of the trotting and dog-racing track currently in the vicinity by the time the laboratory is complete in 1981.





'They don't seem to notice the Minis.'

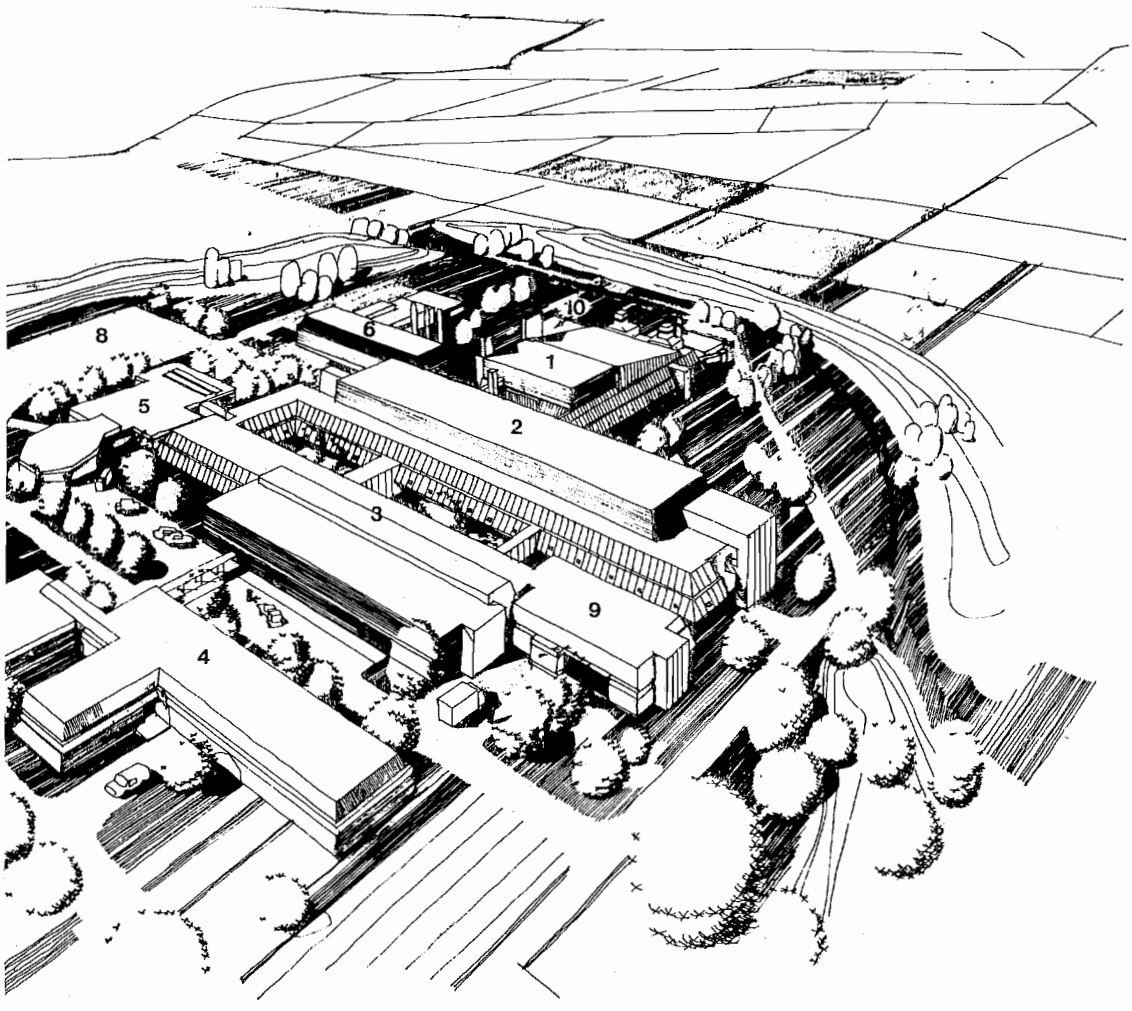
Bandicoots

Sydney residents who have an allergy to bandicoots which dig in their gardens don't have to look far for some place to leave their captured 'pests' — Dr Gordon Lyne of the Division of Animal Physiology at Prospect is happy to take them over.

For the past two years Gordon has been making a study of these little animals, one of Australia's marsupials which up until recently has been largely neglected by zoologists.

'We know very little about bandicoots,' Gordon said, 'and many aspects of their biology remain to be investigated.'

Gordon, who is the author of the book 'Marsupials and



1. **Large animal house**
   - Vaccine testing and experimental purposes
   - Animal entry and grain storage
2. **Laboratory wing**
   - Diagnosis
   - General virology
   - Biochemistry
3. **Scientific services and stores wing**
   - Personnel entry
   - Media preparation
   - Tissue culture
   - Internal canteen
   - Workshops and laundry
4. **Small animals breeding wing**
   - Animal breeding
   - Insectary
   - Plant equipment
5. **Administration building**
   - Lecture theatre
   - Library
   - Kitchen and cafeteria
   - Administration offices
6. **Services building**
   - Plant equipment
   - Maintenance workshop
7. **Entry checkpoint**
   - Gate house and animal unloading
   - Wheel bath
8. **Car parking**
9. **Vaccine production unit**
10. **Sewerage treatment storage tanks**

; welcome at Prospect

Monotremes of Australia', has been interested in bandicoots for more than 20 years, but it was not until the Division established its marsupial unit two years ago, that a serious study of the animals was started.

'The unit was set up to study aspects of the reproductive, environmental and nutritional physiology of Australian marsupials so that we could obtain information on comparative aspects of their physiology and study the interactions between the animals' environments and their physiology,' Gordon said.

Endangered

'There are about 120 species of marsupials in Australia and our concern is that while some of them have flourished since the arrival of the white man, others have become extinct or are in danger of extinction.

'Among the 11 species of bandicoots for example, no less than five are now extinct, rare or endangered.

'If we're going to be able to carry out rational conservation programmes we need both ecological and physiological knowledge of the animals before any such projects are undertaken.'

Along with two other members of the staff, David Hollis and Robyn Smith, Gordon has been successful in establishing colonies of two species of bandicoots at the unit—a long-nosed one (*Perameles nasuta*) and *Isoodon macrourus*, a short-nosed species.

Reversed daylight

Some of the animals are kept under ordinary conditions, but since 1972 with the Division's establishment of a nocturnal house, about half have lived under reversed daylight conditions which enables the team to keep a close watch on them in working hours.

A closed television circuit and videotape recorder allows the staff to record, among other things, actual matings.

'We require embryos of known age for our studies,' Gordon explained.

Attempts to breed bandicoots in captivity have not been particularly fruitful in the past but the unit has now succeeded in breeding a number of litters.

One to five young may be born in a litter, but the average size is two or three.

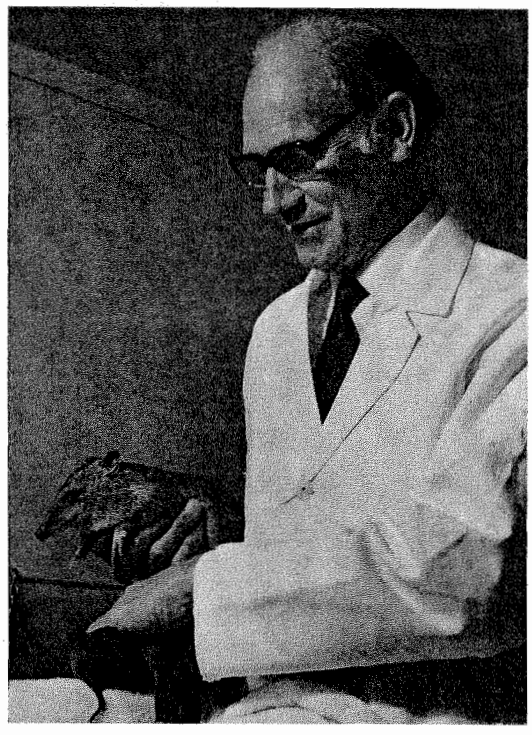
Nearly all the unit's long-nosed bandicoots, however, have been trapped in the Sydney area and brought in by residents who object to their presence in their gardens.

'Most of our short-nosed ones have been trapped by David and me near the NSW coast,' Gordon said, 'about half way between Sydney and Newcastle.'

The animals have proved to be reasonably easy to handle, though they are capable of giving an unwary person a nip and they are fairly hardy and are not exacting in their feeding requirements. About the size of a rabbit, they have very soft fur.

Like other Australian marsupials they have an engaging appearance and if it were not for their rather anti-social gardening habits, many people might encourage them to remain around their homes as pets.

'In the years to come I hope we'll have gathered enough information about bandicoots to publish a book on them,' Gordon said, 'but at present so little is known about the animals that I think we have more than a lifetime of work ahead of us.'



Gordon Lyne and friends at the Division of Animal Physiology, Prospect

'Well wisher' donates cheque

The mailbag for Head Office occasionally contains some pleasant surprises. The letter below, addressed simply to the 'finance officer' of CSIRO was received a short time ago. The writer did not give his name but the 'experts' consulted on such matters suggested the letter may have come from an elderly person.

Sir—

I am a great believer in scientific research and consider that most of our problems could be solved if we thought about them in a scientific way.

There should be a levy on all income earners to create a fund for research — say a proportion of their income. To start it off here is my contribution. Use it how you will. No acknowledgement is necessary.

—Well wisher.

Editor's footnote: the letter contained a cheque for $175.

H. G. Smith Memorial Award

Dr D. H. S. Horn, Division of Applied Organic Chemistry, has been awarded the H. G. Smith Memorial Medal of the Royal Australian Chemical Institute for 1973. The award is made annually and is the Institute's highest honour for chemical research.

Benevolent Funds present combined annual report

For the first time, CSIRO's Benevolent Funds — located in Brisbane, Canberra, Melbourne (Southern) and NSW — have prepared a combined annual report.

In presenting this to the Executive on behalf of the funds, Mr Ray Viney said that this move enabled the groups to give an overall picture of this aspect of CSIRO staff activities.

The joint assets in 1973, he said, amounted to a little more than $32,000.

Since then, however, $8000 has been transferred to the Brisbane fund for distribution to CSIRO victims of the northern floods.

'Before that disaster,' Mr Viney noted, 'the need for such benevolent funds had been questioned by some staff members.

'The rapid and generous assistance provided from them at that time indicates very clearly the value of the present arrangements and should dispel any fears that unnecessary reserves were being built up which were unlikely to be called upon.'

Membership

The report shows that membership expressed as a percentage of total staff is:

Brisbane, 62 per cent.
Canberra, 66 per cent.
NSW, 70 per cent.
Southern, 70 per cent.

Expenditure

There was a considerable variation in the extent of fund activities throughout CSIRO, but 1973 was considered an average year with about three-quarters of the income being disbursed to meet the needs of staff experiencing hardship in one form or another.

(No distinction is made by the funds when considering a given case between a member of staff who is a member of a fund and one who is not.)

'The total assets, while reasonably substantial, cannot at this stage be considered excessive, particularly when consideration is given to the impact of inflation on the purchasing power of the dollar,' the report adds.

The chairmen of the four funds recorded their appreciation and gratitude of the service given by those engaged in the operation of the funds and to the Chairman and Executive for their encouragement and active assistance in such matters as travel, printing of brochures and deductions of contributions from salary.

These, they said, were significant contributions to the successful operations of the funds.

The accompanying tables show the 1973 income/expenditure of the four funds and the assets.

Income/Expenditure

Fund	Income	Expenditure	Excess Income Over Expenditure
	$	$	$
Brisbane	1,104	107	997
Canberra	3,131	3,591	—460
NSW	3,629	1,770	1,859
Southern	5,823	4,405	1,418
TOTAL	13,687	9,873	3,814

Assets

Fund	Investments and Cash	Outstanding Loans	Total
	$	$	$
Brisbane	2,468	NIL	2,468
Canberra	3,375	1,308	4,683
NSW	11,945	604	12,549
Southern	12,597	NIL	12,597
TOTAL	30,385	1,912	32,297

Dr D. F. Kelsall becomes new Chief

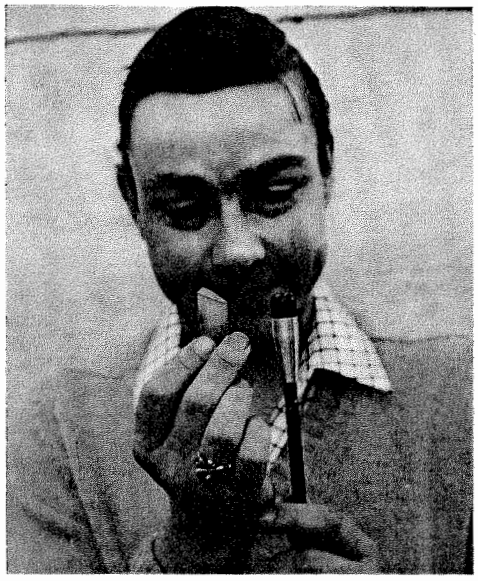
A distinguished research leader who has achieved international recognition for his work in the field of mineral processing has been appointed Chief of the Division of Chemical Engineering at Clayton, Victoria.

He is Dr D. F. Kelsall (right), a former chief research scientist of the Division.

Dr Kelsall will fill the vacancy caused by the appointment of the former Chief, Dr H. R. C. Pratt, who has become Visiting Professor at the Department of Chemical Engineering, University of Melbourne.

Before joining CSIRO in 1959, Dr Kelsall was a principal scientific officer at the Atomic Energy Research Establishment at Harwell and previously had had five years of mining research experience in Zambia.

Fifty-six years of age, he is the author of 42 scientific papers.



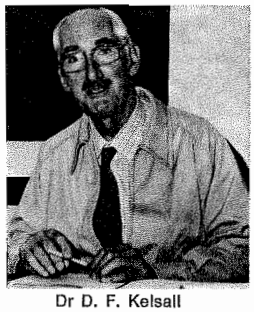
Science helps blind man

Bill Stevens of the Melbourne suburb of Canterbury is blind, and like many other blind people has had a continual problem with the wear on the nylon tips of his walking cane. A group of scientists at the Division of Tribophysics who knew of his problem combined resources to build Bill a longer-lasting tip.

The first trial unit was made of zirconium and a later one, made for Bill's long cane, was constructed from boron carbide.

The Division estimates that the new tips will last at least 50 years.

Picture shows Bill Stevens with his new cane tip. The old nylon one is in his left hand. (Courtesy 'The Melbourne Sun'.)

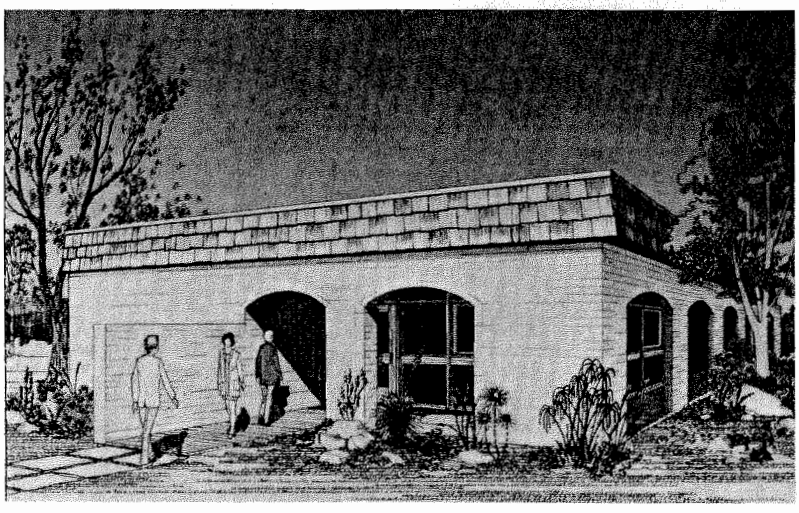


Dr D. F. Kelsall

Australian branch

An Australian branch of the Royal Meteorological Society has been formed and members feel this will ensure that the advancement of meteorological and related sciences is more effectively pursued in this country. The Chairman is Dr A. J. Dyer, and the Secretary is Dr K. T. Spillane, both of the Division of Atmospheric Physics, while Professor B. R. Morton of Monash University is the Vice-Chairman.

NEW LABORATORY FOR MERBEIN



An artist's impression of the new experimental wine-grape quality laboratory being built at the Merbein property of the Division of Horticultural Research. Finance is being provided by the Australian Wine Board.

The laboratory will house small scale winery equipment used to process newly produced hybrid grapes from the Division's grapevine breeding program (headed by Mr A. J. Antcliff), grapes from vine varieties newly imported from overseas, and grapes from field trials.

There will also be ample cellar space and a specially designed tasting room. The laboratory should be completed before the 1975 vintage.

Hugh Gordon retires from McMaster Laboratory

One of Australia's best known veterinarians, Dr Hugh Gordon, has retired after 40 years of service with CSIRO.

Dr Gordon enjoys a very high reputation both in Australia and overseas and has had many distinguished honours conferred on him throughout his long career.

He started his association with CSIRO when he joined the McMaster Laboratory of the Division of Animal Health in 1931, the year the laboratory was established.

Until 1933 he was the Walter and Eliza Hall Veterinary Research Fellow when the late Sir Ian Clunies Ross was the first Officer-in-Charge.

Dr Gordon's career was undoubtedly influenced by Sir Ian and he collaborated with him in writing the well-known text book, 'Internal Parasites of Sheep'.

Apart from his presentation of many papers at many conferences, Dr Gordon was invited by the University of Pretoria to deliver the Sir Arnold Theiler Memorial Lecture in 1968.

He received the Golden Fleece Award of the Californian Woolgrowers in 1970 and was recently elected an honorary member of the Association Mexicana de Parasitologia Veterinaria.

For many years Dr Gordon has been the Australian Official Correspondent of the Commonwealth Bureau in Helminthology. He was President of the Australian Veterinary Association from 1951-52, was elected a Fellow in 1959 and awarded the Gilruth Prize in 1965. As well, he is Honorary Librarian of that Association.

Dr Gordon is also a Foundation Fellow of the Australian College of Veterinary Scientists.

His farewell was marked by a Division function and a public dinner. Representatives from universities, industry and veterinary organisations were present at the latter occasion at which Dr A. E. Pierce of the Executive presided.

From 9 October (never 8 or 10, so the locals say), Puffinus pacificus returns from its annual migration to the Arctic circle to nest on Heron Island.

The yahoo fauna of Heron Island

By Napier Mitchell

There they seem to take revenge on man for spoiling the 40-acre tropic isle with tourist lodges and other buildings.

Every day, from 9 October to late March, they roam the nearby seas of the Great Barrier Reef in search of food.

Every night they moan and wail, make love and war just outside the cabin walls of the Heron Island residences.

Noises of trains, alarm clocks, trucks and garbage collectors are minor din compared to *Puffinus. Homo sapiens* seems to have adapted to the noises of suburbia but few have ever slept through a mutton bird chorus.

Versatile

The birds' repertoire includes love sounds, funeral dirges, rhythm and blues, war cries, yodels and rape.

And just in case there's any possibility that man can learn to sleep through each one of these, *Puffinus* has developed a social behaviour which allows it to combine several noises at once from different birds in an infinite range of pitch.

Such a combination is not conducive to sleep.

Mutton birds seem to particularly dislike Mathew Dick. Matt is one of only two people who hold CSIRO studentships for Ph.D. studies in Marine Biology. He spends five weeks of every quarter at the Heron Island Research Station.

During the day Matt breathes through a snorkel or an aqualung while he studies the behaviour of *Rassus* — a genus closely related to the parrot fish.

At night he works in the laboratory until 10.00 p.m. when the lighting generator goes out.

Then he moves to a tiny 10 ft x 10 ft hut—often shared with three other visitors—and by candlelight on a table scrounged from a piece of 3-ply driftwood supported by two broken stools, Matt writes up his Ph.D. thesis.

That's when *Puffinus* moves in.

Attracted by light they head for Matt's cabin because it usually has the only candle burning.

The door can't be shut. The temperatures are still in the high 20s and the humidity in the 80s. Doors are left open to beckon in the slightest resemblance of a breeze.

So *Puffinus* has pretty much a clear go. But *Puffinus* never makes a tidy business of anything, except perhaps with his navigation and nest-building habits.

Hard work

Quite a befuddled bird on land, he stumbles into the room in a drunken daze—a state which is hardly surprising for a bird that departs at 5.00 a.m. to roam the seas and arrives home at sunset to begin mating and cavorting until 5.00 a.m.

Puffinus' intrusion into Matt's room is just as predictable as his daily routine.

First a walk from his sandy burrow through a pool of stagnant muddy water, then a stagger through the door, a shake of feathers to remove the sand and a wipe of feet to remove the mud.

It trips over anything on the floor, wails, jumps on the candle and chunders on Matt's thesis.

To register protest at being gently removed by the ever-patient Matt, it defaecates on his trousers and harmoniously howls 'rape'.

Fish business

Matt has been working on *Rassus* for two years now. He is no mean fisherman. There's something like 500 species of fish on the reef and Matt reckons, given a fair go, he could catch nearly every one of them. Except *Rassus*.

Unlike mutton birds, *Rassus* are very smart. Matt confided modestly that he suspects they might be smarter than himself.

'Tried nets?,' I suggested helpfully.

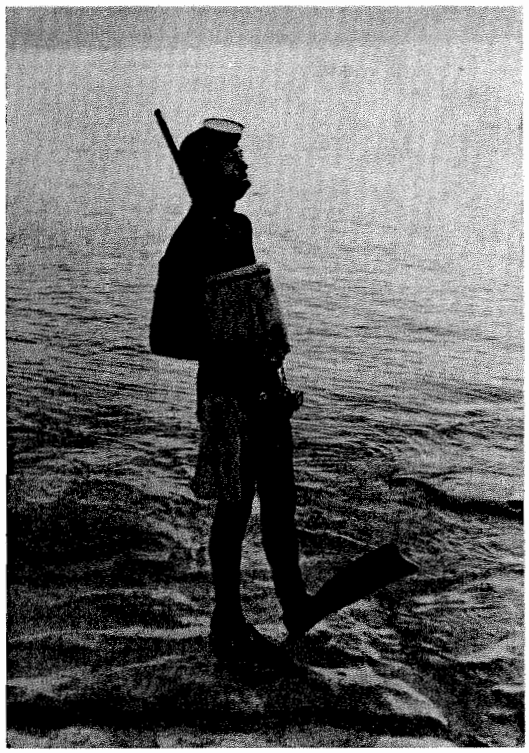
'That was only the beginning,' said Matt.

'I've tried small nets, large nets, transparent nets, baited nets, slurp guns, anaesthetics. I tried swimming after them until they were exhausted. They won.

'I waited till they were asleep and snuck up on them. I turned rocks at low tide hoping to find them trapped. After two years I still haven't caught a *Rassus*.'

Matt is now resigned to spending his full studentship, immersed for several hours a day watching the behaviour of *Rassus* in their natural environment.

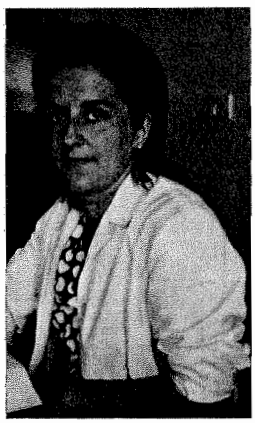
He has one special plea. Anyone in CSIRO with a heated wet suit?



Mathew Dick braving Barrier Reef waters in search of the elusive *Rassus*.

Spanish colleague

The Division of Soils in Adelaide will have a Spanish influence around the place for the next couple of years following the arrival of Dr M. I. Telleria from Madrid.



Dr Telleria will be working in the Mineralogy Section on a post-doctoral scholarship from Consejo, Superior de Investigaciones Cientificas Madrid.

Her work with the Division will be concerned with the study of amino-acid clay complexes.

Chairman's secretary retires

It's probably true to say that very little has happened in Head Office in the last 24 years that Ms Sheila Kruse has not been aware of.

She joined CSIRO in 1949 to become secretary to Mr Guy B. Gresford who was then an Assistant Secretary. Later he became Research Secretary (Physical Sciences) and afterwards Secretary of CSIRO.

When Mr Gresford left to go to the United Nations in 1966 Sheila was appointed secretary to Dr J. R. Price who had just joined the Executive.

When Dr Price became Chairman of CSIRO Sheila continued to work with him.

With a long span of time with CSIRO to think back on, Sheila has now taken long service leave before her retirement and plans to make an extended overseas tour.

She will spend several months in the UK, will visit the Continent and has a two-week walking tour of Crete on her itinerary.

Before she left Head Office, Sheila was entertained by Dr and Ms Price and Members of the Executive at a reception at the Commonwealth Club. A presentation was made to her from the staff at Head Office at another gathering.

Ms Sue Hanmore, who has been secretary to Mr Grattan Wilson, Secretary (Administration), will take Sheila's place as the Chairman's secretary.

Appreciated

It's nice to know someone appreciates us . . . the Chief of Division of Wildlife Research, Dr H. Frith, has received a letter from a Victorian schoolboy thanking the Division for the information it provided him with.

'A few months ago,' he said, 'I wrote to a place asking for information. I still haven't had a reply. So far when I've written to any Division of CSIRO I've had really quick replies. It's a great organisation. When I'm old enough I'm going to work in CSIRO.

'Whenever we're shown a film at school about CSIRO's work they're always good and interesting. I only wish we could see more of them.

'P.S. If you get time I would love to get another letter from you or the Division. But don't write back if you don't want to.'

Juniper may become national monument

An Australian ecologist, Dr Victor Squires, has 'discovered' a giant juniper tree in Iran which was probably a seedling when Darius founded the Persian Empire 2500 years ago.

It was probably a reasonably sized shrub when Alexander the Great swept through the Empire on his historic march to India.

A member of the Rangelands Research Group at Deniliquin, Vic was in Iran last year at the invitation of a firm of consultants to complete a rangelands survey in the Karaj Dam Catchment area.

In the course of his work he walked over most of the steep mountains of the Karaj catchment, about 60 kilometres west of the Iranian capital, Tehran, and near the Caspian sea coastline.

The mountains rise to 4000 m and are snow covered for five months of the year. The rest of the time they are bare and arid.

It was in this steep and desolate area that Vic came across the big juniper. From his knowledge of trees and what he heard of the local legends it must have been a seedling when the Persian Empire was founded.

'Junipers,' Vic said, 'were once common in the region but have been exploited recklessly over the centuries and are now few in number.

'No one seems to know how the ancient tree survived except that it has come to be venerated and respected for its powers.'

Through forestry colleagues in Tehran Vic is now endeavouring to have the age of the tree scientifically authenticated but he is in little doubt of the outcome since another tree he was taken to see not too far from this one has been dated and is from a slightly later period.

'I've made a report of this to the Government of Iran and am hoping that the Shah will take it up and have the tree declared a national monument,' Vic said.

'Something as old as that should be venerated for it is part of the country's heritage.'

Vic hopes eventually to see a sign board of some kind erected near the juniper which will set out its growth in relation to the chronological history of the country.

This would show the tree as a mere seedling when Darius came into the national picture, as a shrub it was thriving when Alexander destroyed Persepolis and so on.

In the meantime he is keeping in close touch with his Iranian colleagues and hopes to have advice back soon that the tree's age has been confirmed.

OECD review

Cont'd from page 1, col 2

March the discussion paper 'Towards an Australian Science Council'.

In doing this, he said he was conscious that in recent years disenchantment had arisen with the part played by science and technology in developments of dubious value to mankind.

'In an increasingly environment-conscious society, it is now apparent that science and technology have themselves created problems,' he said.

'It is my belief that these problems can be solved only by the application of re-directed scientific and technological effort and the Government is moving on several fronts to achieve this result.

'The Government recognises that the complexities of science and technology on one hand and of society on the other, will demand in the future a more coherent national approach to the development and utilisation of Australian science and technology than in the past.'

For this reason, Mr Morrison said, it was the Government's intention to establish an Australian Science Council.

Its broad purpose would be to assist the Parliament and the Government on science and technology.

Although it had consulted Government departments, statutory bodies, universities, scientific organisations and other interested groups and asked them to offer comments on the proposed council's charter, organisation and composition, there were differences of opinion over what role the council should have.

Since the role and structures of science advisory machinery in a number of other countries had been the subject of special studies by the OECD, Mr. Morrison said, he felt that OECD should be well placed to examine and comment, from an independent standpoint, on science activities in Australia.

Initial meeting

On its arrival in Sydney a meeting was held at which the panel had time to discuss the program with the Minister before he left on a 10-day visit to Sri Lanka. Among those present was Dr J. A. Allen, CSIRO's Executive Officer.

The program for the review was outlined and the Minister spoke of his hopes and expectations.

Debate

The team has now returned to Paris where it will prepare its report. It is expected that this will be finished in June or July.

The next step will be the meeting of the OECD Committee for Scientific and Technological Policy in Paris in October when members of the 24-nation strong OECD will participate in a frank and open discussion of the report and the Background Document prepared for the review.

At this assembly, which Australia will attend, further questions are expected to be posed and answers will be given.

Science representatives of other countries will comment on the whole review and offer suggestions on any matters on which they have had experience.

It is expected that CSIRO may be invited to send one or more delegates to this meeting.

Out of this debate will come the final report which will include the Background Document, the panel's report and the report prepared from the Paris meeting.

The final report will be taken into account by the Australian Government in making final decisions about the proposed Science Council.

It is emphasised, however, that the OECD review in itself is regarded as advice to the Government and that decisions concerning the future of science and technology in Australia remain a matter for the Australian Government.

Charter may be changed

CSIRO's charter which at present gives it the 'powers and functions' of carrying out scientific research in the spheres of Australian primary and secondary industry may be amended in the future to include research into community development.

This was one of the comments made by the Minister for Science, Mr W. L. Morrison, at a press conference in Canberra when he reviewed the OECD visit to Australia.

'It's been a concern of mine for some time that CSIRO should move more into this area,' he said. 'The panel has confirmed my views that more research should be undertaken in Australia in this field as well as in health and environmental matters.'

Mr Morrison said that panel had expressed the opinion that CSIRO was one of the best organizations of its kind they had come across and that it enjoyed a world reputation.

'They believe it's a dynamic factor in science and technology in Australia but there is feeling that CSIRO might need to adopt a more multi-disciplined approach to the problems science has to face.'

Two observations the panel had expressed to him were the disappointingly low level of industrial research done in Australia and the preponderance of research that was undertaken by government in Australia while only a small amount was done by industry. This, they said, contrasted with other countries.

'It's my opinion,' Mr Morrison said, 'that multi-national industries with branches in Australia tend to adapt overseas developments for Australian conditions rather than initiate new research themselves and it could be that in future such companies might be required to agree to do a certain amount of their R and D here.'

Discussing the setting up of the proposed Science Council Mr Morrison said that the panel seemed to think it should comprise about 12 to 15 people chosen not because of their disciplines but because of their personal standing. At the same time it should include people such as a trade unionist and social scientist. This, he added, was in line with his own thinking.

A large number of the expected recommendations of the panel would meet with sympathetic support from the Labor Government but he pointed out that they were not bound to accept everything they suggested.

'Their review has been a milestone,' he said. 'It's not that we couldn't have set up in Australia a group of people of the same high calibre to carry out such a review, but these men have come to us with a fresh and independent approach which our own people couldn't have given us simply because they're too close to the scene.'

No decision yet

No decision has yet been made by the Federal Cabinet on CSIRO's 67-metre research vessel.

The submission seeking approval to proceed with the construction of the vessel, estimated to cost about $7 million, was first presented to Cabinet in November 1973.

It is understood that the matter has received some preliminary consideration but the matter has not been finalised.

The vessel has been planned for the Division of Fisheries and Oceanography.

Head Office

Cont'd from page 1, col 4

expedient for Australia to do the work itself.

'CSIRO Australia' covered the history of the Organization, its powers and functions, organisation, finance and management, research, communication with industry and the public, and the changing pattern of research.

'Achievements of CSIRO' was a comprehensive description of much of the research which had been successfully carried out in the various Divisions and of the implementation of the results.

'These documents will be of great use to the Organization,' Dr Allen said, 'and have proved to be a "bonus" from the review.'

SAFETY NOTES

Blow-up

The pressure-pack type of dispenser, from fly spray to fire extinguisher, has become part of our way of life. They are safe and convenient if used intelligently, but can be a lethal weapon if abused.

This type of dispenser can explode at temperatures above about 50°C, a temperature often exceeded inside a car parked in direct sunlight.

The photo shows what happened when a pressure-pack type fire extinguisher was left on the rear ledge of a car parked in the sun for a couple of hours. Fortunately, no one was in the vehicle at the time.

If that much damage could be done to a laminated windscreen, what would it have done to the skull of the driver?

Make sure pressure-pack cans are not exposed to excess heat, particularly direct sunlight, not only in vehicles but on the beach or at a picnic or barbecue.

J. W. Hallam Safety Officer

Mushrooming—the 'different' way

When Leslie While, a member of the administration section in Hobart, wants to go mushrooming, she does it in a novel way — she finds her target by aircraft.

'You can spot the rings easily from the air,' she told Coresearch.

To most people mushroom spotting by aeroplane might seem like an expensive way to gather the delicacies, but to Leslie it's all more time chalked up in her flying hours.

Completely in love with flying, Leslie started her lessons in March 1972 and a year later had her private licence. Since then she has been learning aerobatics and is working for an aerobatic endorsement to her licence.

'You have to learn to do spins, loops and barrel rolls,' she said. 'It's a marvellous feeling. It seems like you have total freedom of the skies.'

Leslie has no wish to become a commercial pilot but she can fly passengers providing she doesn't accept payment for her work. 'Passengers hire the aircraft,' she said, 'but they fly then at their own risk.'

With more than 100 hours to her credit, Leslie finds flying her own aircraft is a great way to see the country. She has flown across from Tasmania to Sydney and has seen a lot of the outback of her own island, especially its rugged south-west corner.

Her flying, however, has not been without its moments. 'The engine failed one week-end last year,' she said, 'just as I was coming in to land at Hobart. I suddenly found I had no power to come in over a clump of trees, then at the last minute it caught and I pulled out of what might have been a sticky episode.'

Leslie also had a few disconcerting moments one occasion when she met another pilot coming into land on the same strip. Both planes were coming in from different approaches. Fortunately, the eyesight and reactions of both pilots were good.

Leslie has found that most people still regard flying as something that is the privilege of males. 'Passengers open the door to get in the aircraft and then realise they have a woman for a pilot,' she said. 'After the initial shock most of them accept it and have no further worries.'

'We don't sell petrol any more, folks, but please make the utmost use of our spotless rest rooms.'

—Courtesy 'Punch'.

Potter gets the jackpot

'Coresearch' quotes from 'Minfo' the internal newspaper of the Minerals Research Laboratories:

At the start of his holiday in Fiji, Ed Potter (and his wife) had the experience of sharing a taxi to their hotel with none other than Abigail herself. When asked how long the ride lasted, Ed replied: 'I wasn't looking at my watch.'

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'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.

Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478 or Wendy Parsons, 48 4227.

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Produced by the Central Communication Unit for circulation among members of CSIRO staff

June 1974

Australian scientists visit China

Links re-established between countries

The Chief of the Division of Animal Genetics, Dr Jim Rendel, has returned from a visit to China with an unexpected appreciation of the Chinese use of acupuncture as an anaesthetic.

An official photograph is part of protocol at a Chinese reception and the Australian scientific mission posed for this one with their Chinese hosts at a function held at the Great Hall of the People in Peking. The reception was given by Vice-Premier Teng Hsiao-ping and the picture was used in a Peking newspaper the next day.

The Australian delegation from left was: Professor R. D. Brown, Department of Chemistry, Monash University; Professor G. L. Ada, Department of Microbiology, ANU; Professor Liu Ts' un-yan, Dean of Faculty of Asian Studies, ANU; Sir Rutherford Robertson, President, Australian Academy of Science; Dr Paul Wild, Chief of the Division of Radiophysics; (Vice-Premier Teng Hsiao-ping is standing next to Sir Rutherford Robertson in the centre); Professor J. D. Ovington, Professor of Forestry and Dean of the Department of Science, ANU; Professor H. A. Buchdahl, Department of Theoretical Physics, ANU; Dr R. M. Williams, Vice-Chancellor, ANU, and Dr J. M. Rendel, Chief of the Division of Animal Genetics. The CSIRO staff were present as members of the Academy.

Dr Rendel admits he'd be prepared to have an operation where acupuncture was used—providing, he says, it was done in the hospital in Canton where he saw two operations involving major surgery with acupuncture as the anaesthetic.

The visit to the Cantonese hospital was one of the many experiences for the group of Australian scientists who have been in China at the invitation of the Chinese Academy of Science.

The team, a joint one from the Australian Academy of Science and the Australian National University, spent three weeks visiting Peking, Canton, Shanghai, Suchow and Nanking with forays out into the rural areas to see life in a commune and to view agricultural and other rural projects.

'At the hospital we watched two major operations performed by women surgeons,' Dr Rendel said.

'The patients received normal pre-operative medication and then each had four needles embedded in their body in specific points to a depth of three or four centimetres.

'These were then connected to an electric current which was delivered in a square wave,' Dr Rendel said.

'Twenty minutes later surgery started. The patients remained conscious, and while they were not voluble, they did talk at times to the surgeon.

Dr Rendel said the Chinese admitted that after 2000 years of use they still did not know why or how acupuncture worked. They only knew it did. And he could vouch for it.

'They are now doing research on it to find just how it affects the nervous system and at an institute I later visited, I watched them doing experiments on animals with it.'

Dr Rendel took time to look at animal projects in some of the rural areas and found the Chinese were more interested at this stage of their country's development in practical work in animal production rather than in the more sophisticated techniques involving animal genetics.

Scientific liaison

The visit to China is seen by the Australians as a step to the scientists of the two countries enjoyed before the cultural revolution in 1966.

'Eighteen months ago the Chinese initiated an approach to get back to that old footing,' said Sir Rutherford Robertson, President of the Australian Academy and a former member of the CSIRO Executive.

'Towards the end of last year an invitation was issued jointly to the Academy and the ANU which culminated in the visit of wards re-establishing the link nine of us, and we hope a similar group will come to Australia in October on a return mission.'

The Australians had been free to do whatever they wished within the limits of their time and the travel situation. In some instances Professor Robertson said, they had moved as a group; at other times individuals had followed their own particular interests.

They had visited a number of universities and institutes of science, they had gone to primary and middle (high) schools had visited a commune, seen how a Street Committee worked in an urban area, had been to hospitals and had a chance to

Cont'd on page 4

'Home was never like this . . .'

CSIRO is a large Organization scattered all over Australia. In the course of their work staff are called upon to inhabit hundreds of buildings all of which vary in size, shape and antiquity.

While none suggests opulence, it would be true to say that there are some members of the Organization who enjoy a standard of accommodation which, if it does not have a 'touch of class' about it, at least offers the inhabitants an aura of history, the suggestion perhaps that they have something that is at least 'different'.

Such has been the fortune for instance, of some members of the Division of Entomology . . .

For the last 16 years the Division has been using the old Townsville Hospital mortuary as a field station, but the building is now being demolished to make way for a new hospital laboratory block.

The Morgue, as it was affectionately (?) known, was apparently built at the turn of the century and was used as a mortuary until about 1940.

It was solidly constructed of brick and stone, which must have been unusual in those days of wooden tropical buildings and may perhaps have been for added coolness, bearing in mind the building's purpose.

It was noticeably isolated from neighbouring buildings!

Initially it consisted of a verandah with two post-mortem rooms off it; much later the verandah was enclosed with fibro walls to make an additional laboratory room.

The Department of Health used it sporadically, until in 1958 they loaned it indefinitely to the Division of Entomology. It was used by parties on field trips in the north for work on cattle tick and termites in particular.

In 1967 it became a permanent home for an EO and a TA working with dung beetles on the buffalo fly control project. A caravan laboratory on loan from the Long Pocket Laboratories was parked beside the mortuary to provide more working space and a fenced concrete vehicle park was installed.

In these later years little evidence remained to show the original function of the building. The marble slabs in the two dissecting rooms had long gone, though curious visitors sometimes remarked on the presence in the middle of the floors of drains for fluids . . .

The early days of Townsville were often wild and the Morgue must have had a great variety of characters passing through it — in one condition or another.

They apparently all moved on, but when working late at night the dung beetle section would often hear scuttling noises in the adjoining dissecting rooms.

Many of these turned out to be made by geckos or large cockroaches, but not all were identified, and late on a still, sultry, tropical summer night it was very easy for the imagination to wander . . . wander . . . wander . . .

The Morgue, a home away from home for members of the Division of Entomology's dung beetle section in Townsville. The building used by CSIRO is the white one in the centre of the picture. The caravan alongside gave the staff extra accommodation. The building to the left is the Animal House of the Department of Health and the large building in the background is part of the Townsville General Hospital. (Picture: P. Ferrar)

Information O-I-C named

Mr Peter Judge, head of the OECD Science and Technology Information Section in Paris, has been appointed Officer-in-Charge of CSIRO's Central Information, Library and Editorial Section, based in Melbourne.

Mr Judge holds a B.A. degree (first class honours in Zoology) and a M.A. from Cambridge.

Several years of operational research in industry preceded his position with OECD.

Since 1964 Mr Judge has been responsible for major activities related to OECD information policy.

In addition to co-ordinating the work of the CSIRO group, he will develop and implement new methods of storage, retrieval and dissemination of scientific and technical information in areas which concern CSIRO.

The aim will be to improve accessibility and use of such information within the Organization and externally.

Solar eclipse will be monitored in WA

For about two and a half hours on the afternoon of 20 June the south western corner of Western Australia will have a great shadow across its towns and remote settlements.

During this time thousands of local sightseers, hundreds of tourists, many from overseas, and groups of scientists, engineers and technicians will make the most of every last second to observe this, the 1974 solar eclipse.

The period of totality, however — the time when the sun is completely masked out by the moon — will last for only about four minutes and it is during this period that the scientific activity will be at its height.

Although the moon's shadow will pass a quarter of the way around the earth, it will cross land only twice in this sweep. In the morning it will touch Amsterdam Island, in the Indian Ocean, brush over its extinct volcanic cone 911 m above sea level, and by early afternoon move on to the south western tip of Western Australia.

The central line of totality will be about 80 km or so south of the coast but the path covered by the shadow will be nearly 300 km wide, bounded roughly from Busselton in the north to Albany in the south.

Rocket launch

In a patch of sandhills on private farmland near the town of Lancelin, 100 km north of Perth, a United States scientific team will be standing by to launch two rocket-borne solar physics experiments.

Their purpose will be to study temperature distribution around the sun's corona — the outer part of the sun's atmosphere — in an investigation which can only be conducted above the earth's atmosphere during a total eclipse.

The scientists feel that the measurements should improve the understanding of the physical processes of energy transfer from the photosphere — the luminous surface of the sun — outward into the solar corona and the solar wind.

The rockets will be launched about 1.11 pm in a south-westerly direction from Lancelin into the path of totality over the Indian Ocean. About 15 minutes later, the two payloads containing scientific instruments will impact in the ocean about 160 km northwest of Perth.

Both two-stage Terrier-Sandhawk rockets systems will be used to carry duplicate payloads to an altitude of 320 km. Just before entering the area of the total eclipse, an onboard altitude control system will point the scientific instruments at the sun. Photographic data will then be gathered during about three minutes of totality.

As the payload descends, a parachute will be deployed for the splashdown in the ocean about 15 minutes after launch. CSIRO's research vessel, 'Sprightly', and aircraft with radio-direction finding equipment will be used to recover the payload which will be kept afloat by an air-filled flotation bag.

Ground observations

While the team engaged in the launch is occupied in the northern area, other members will be based near Albany on the south coast to carry out ground based observations.

And while all this is going on, another team of scientists, this time from CSIRO's Division of Physics in Sydney, will be based at remote areas near Walpole and Windy Harbour on the south coast where they will also carry out observations of the corona.

One of the main interests of the Australians will be to measure the electron temperatures.

'We hope then to be able to compare our data with what the Americans get on the atom temperatures,' Dr R. G. Giovanelli, Chief of the Division of Physics at the National Standards Laboratory in Sydney, said.

'Every time this work has been attempted in the past there have been discordant results.

'With a chance to study both, we should have some intriguing information.'

The Division will also carry out some photographic experiments — weather permitting.

The Australian project was conceived by Dr Giovanelli but, as he said, it would have been impossible to mount it in the time available without the support of an 'enthusiastic and expert staff and a laboratory as big as NSL'.

Grandstand view

At ground level the maximum period of totality will be about four minutes and four seconds, but for other scientists and astronomers flying in a jet aircraft, the eclipse may well be in sight for up to nine minutes.

Passengers in the plane are expected to be mostly amateurs, some of whom follow eclipses as they occur around the world.

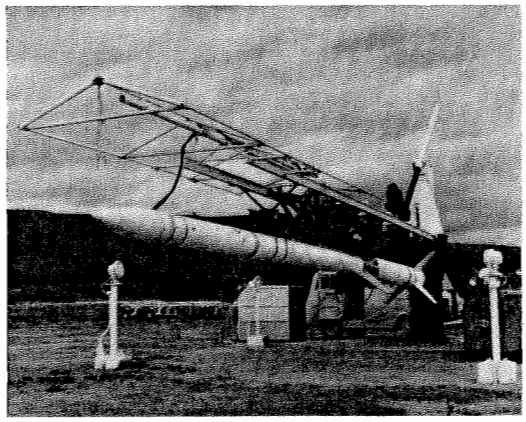
At the time of going to press, about 200 amateur astronomers from other States had indicated that they would visit Western Australia for the occasion, while a spokesman for the Astronomical Society of Western Australia said that another group was expected to arrive from New Zealand.

The society has reserved the Augusta Aero Club field to set up cameras to photograph the eclipse and some members have indicated their plans to search the sky for small comets which might become visible at this time.

Others want to observe the 'shadow bands' caused by the eclipse and another group is to study the behaviour of flora and fauna.

There is also a possibility of a special train being run from Perth to Augusta for the phenomenon.

The success of many of these ventures, of course, depends entirely on the weather and elaborate studies of the meteorological records of the area show that there is no guarantee of a cloud-free day at this time of the year.



Terrier-Sandhawk rocket system on a high altitude diagnostic launcher which will be used at the launch site near Lancelin for the scientific studies of the solar eclipse on 20 June.

Credit Society varies its interest rates

The CSIRO Cooperative Credit Society Ltd has announced variations in rates of interest for June, July and August 1974.

In a press release, it states that the steep rises in interest rates last year and the consequent changes in investment patterns have led to a small decrease in the amounts of money on deposit and consequently on loan, rather than the increases of around 20 per cent that have been experienced in recent years.

The effect of this has been that the Society has had a continual demand for loan money, thus ensuring that all money available has been fully used.

'This highly efficient, in an economic sense, mode of operation now enables the Society, for one quarter only, to simultaneously reduce the rate charged on loans and increase the rate paid to depositors,' the release states.

Consequently, for the quarter 1 June to 31 August 1974 the following rates of interest will apply:

Money on deposit:

Class 1 8% pa Class 3 9% pa
Class 2 8% pa Class 4 9¼% pa

Interest on loans (as applied on 31 May 1974):

8¼% pa (This is a base rate, exclusive of any insurance loading).

Since the increases for depositors are designed to benefit those with a long-term commitment to the Society, special conditions will apply to money deposited in Class 2. For deposits in this class only, the increased rate of 8 per cent pa (instead of 7 per cent pa) will apply only to such deposits as are still extant at 31 August 1974, and will be calculated on either one-half the sum of the deposit at 1 March 1974 and that at 31 August 1974, or on the average deposit over this period, whichever is less.

'Clearly the above rates of interest cannot continue for any extended period,' the release adds, and the Board will maintain its close watch on interest rates over the next few months. It is expected that the rates offered to investors in the new financial year (beginning 1 September 1974) will reflect the current trends in the outside money market.

To the Editor

Sir—

You publish in 'Coresearch' photographs of some very attractive men from time to time, but never with the sub-heading, 'There's a dish at Parkes . . .' or 'Adonis appointed to Animal Health'.

Can it be that such captions would be regarded as degrading to CSIRO men?

— Jewel Pels,
Rangelands Research Group,
Riverina Laboratory.

Burns expert

Dr Tom Pressley of the Division of Protein Chemistry, who has done so much towards making the clothing of children safer in Australia, will leave this month for Berlin where he will attend a conference on international standards of flammability of fabrics.

In September he has been invited to give a paper to the International Society of Burns Injuries in the Argentine.

Waterbirds linked with MV encephalitis

Scientists working on the project to find the source of the Murray Valley encephalitis virus are becoming increasingly confident that there is a definite link between some of Australia's waterfowl and a bush species of mosquito.

Early indications show that the Nankeen night heron may be a source of the virus and to a lesser extent, cormorants.

Tests carried out by Dr Ian Marshall, Senior Fellow in the Department of Microbiology at the Australian National University, have so far revealed that other waterbirds in the area are also highly suspect.

Earlier this year a team of virologists and ornithologists, led by Dr Marshall, camped out in swampy areas around Griffith, Hay, Gol Gol, Shepparton and Rutherglen in an attempt to gather mosquitoes and sera from waterbirds suspected of being virus carriers.

The team included two members of CSIRO's Division of Wildlife Research, Kent Keith and Bevan Brown.

The aim was to find the species of mosquitoes responsible for spreading the virus between their wildlife hosts and man, to recover the virus from suspected bird carriers and to investigate the relationships between the virus causing encephalitis in humans and the one causing the concurrent outbreak in horses.

At the time this issue of 'Coresearch' went to press, Dr Marshall and his staff had tested 280 of the 575 bird sera. 'The results so far show that there might be some species which are more intimately involved than others,' Dr Marshall said.

'The indications are that high numbers of positive sera come from the Nankeen night heron. An interesting aspect to this discovery is that there is a close relationship between this bird and the black crowned night heron which is known to be important in the primary cycle between bird and mosquito and encephalitis in Japan.'

The first tests were carried out on sera from the Murrumbidgee sites and the cycle with the Nankeen herons there looked fairly clear cut.

'I admit I was pretty excited when the results started showing up,' Dr Marshall said, 'but now that we've moved into those from the Murray area, the situation has become a bit cloudy.

'The virus is showing up in more species of birds, but we won't know the full story until we've completed the tests.'

Dr Marshall said they were also getting a lot of other viruses from the mosquitoes including sindbis, a virus found in most parts of the world which causes a mild but rare form of encephalitis in humans, the Ross River virus which causes epidemic polyarthritis and another virus as yet uncharacterised.

As far as the carrier mosquitoes were concerned, 99 per cent of the positive tests came from one species, Dr Marshall said.

This was a different kind from the domestic one that lived in cities but nevertheless it would happily breed and live in towns and buildings that might be located in its habitat.

Dr Bryan Short dies overseas

A former CSIRO agricultural scientist, Dr Bryan Short, has died in Spain following a major operation.

Born in Auckland in 1924, Dr Short was educated in New Zealand. Following three years post-graduate work at the University College of Wales, Aberystwyth, he joined the then CSIRO Wool Biology Laboratories in Sydney.

In 1953 he became one of the first research scientists to move to the site at Prospect which later became the Ian Clunies Ross Animal Research Laboratory.

In 1965 he took leave from CSIRO to undertake an FAO assignment in Uruguay where he attacked the problems of the local pastoral industry with characteristic energy. He even managed to tide the laboratory over a political upheaval which resulted in the mass resignation of his staff.

After a brief return to Sydney in 1969, Dr Short set out for Spain where he found himself not only trying to direct World Bank agricultural funds to their best advantage, but having to cope with legal aspects of land tenure that dated back 300 years.

The Division's sympathy has been expressed to his wife, Edna, and their children.

Building Research assists NCDC

A mobile survey team from CSIRO's Division of Building Research is taking part in an unusual construction project in Canberra where the NCDC (National Capital Development Commission) has embarked on a $1.6 million program to provide medium density housing in the Belconnen suburb of Melba.

The scheme provides for the design and construction of a total living environment — the first Commission project of its kind to use this procedure.

The project may eventually provide the suburb with 450 housing units of varying family sizes built in one, two and three storeys on a site of 10 hectares.

The successful tenderer for the building of the first 100 units was Leighton Contractors Pty Ltd and their contract calls for them to provide not just the houses but the roadworks and services, carports, landscaping and the development of play spaces for young children.

It also includes the planning and design of the units in accordance with the performance criteria drawn up by the Commission in close consultation with the Department of the Capital Territory. The Department will eventually administer the units, all of which will be for rental.

The main object of using one contractor for the project, apart from providing a total living environment in one 'package' of design and construction, is to encourage the use of new construction methods for dwelling units which are not normally used in conventional housing and to realise design and timing advantages which such an exercise offers.

The project is designed so that each home unit will either take advantage of the view or would look out onto a landscaped courtyard.

The construction of the units is based on a pre-cast structural walling system which is adaptable to a wide range of designs, pre-coloured metal deck roofing, concrete floors and non-load bearing internal partitions.

The Commission expects that the use of these prefabricated techniques will provide a significant contribution to the general resources at present available in the house building industry.

Both it and the contractors, however, were interested in the project being evaluated to see what organisational problems might be associated with this type of construction.

They wanted to develop the best possible production of flow patterns and to evaluate the overall economics and then compare them with those of conventional housing.

For this reason the Division of Building Research was invited to participate and since February two mobile observation units from its Building Operations and Economics Section, the leader of which is Bruce Kennedy, have been on site.

David Woodhead (left) and Harry Heath at the Melba construction site in Canberra.

Each vehicle is equipped with a video camera on its roof linked to tape recorders inside and both have now become familiar sights to the contractors and men engaged on the project.

A team of three officers from the Division has been engaged in monitoring progress, often in unpleasant conditions when the men have sometimes had to do battle with Canberra's less pleasant elements.

This type of project is not new to team members.

'We've been doing on site observations of construction work for several years,' the officer-in-charge of the Melba group, David Woodhead, told 'Co-research'.

'During the last three years we've been concentrating on domestic housing in Victoria, Western Australia, Queensland and New South Wales.

'The ultimate objective is to reduce building costs and we believe it's possible to achieve this through better organisation of activities and by planning for continuity of production.

'We observe the sequence of various activities and gain an understanding of them and see how they all fit together.

'Our work is always done in cooperation with the builders and workers,' David said, 'but our findings aren't usually aimed at a particular contractor.

'Rather, we make the information we derive available to the building industry in general, to government authorities, to sources of housing finance and other concerned bodies.

'We're taking a special interest in this NCDC project in Canberra because it may provide an alternative to the use of conventional resources of labour and material which at the present time are so scarce.'

'Where is my wandering buoy?'

CSIRO'S OCEANOGRAPHIC BUOY

'A press release under this heading was sent to you on 11.4.74. The CSIRO Division of Fisheries and Oceanography oceanographic buoy referred to in that release, which has been operating for about 11 months, was found during the Easter weekend, one kilometer south-west of Gabo Island, by the Department of Transport's lighthouse tender vessel M.V. Cape Pillar. It was picked up and will be landed at Adelaide in about two weeks' time.'

For further information contact:
R. H. Austin,
Information Officer,
CSIRO, Division of Fisheries and Oceanography.

This memorandum was recently sent out to the media as a postscript to a press release put out by Robin Austin of the Division of Fisheries and Oceanography at Cronulla.

And thereby hangs a tale of the trials and tribulations of an information officer for when Robin first started working on the story of CSIRO's oceanographic buoy project he thought the whole thing was a straightforward press story.

It was to be a simple article about the free-drifting satellite-tracked buoy which the Division released from HMS Kembla on 30 April last year and which set a world record by sending information to the French 'Éole' satellite for almost 11 months.

By Wendy Parsons

Robin started writing the story of the marathon effort on Friday, 4 April. No sooner was it in the hands of the typist than a cable from France announced that contact with the buoy had been lost in 11 March.

The copy was retrieved — rewrite called for.

Back it went to the typist on Monday to be completed — just as another cable arrived.

Previous information not true. Contact re-established 23 March.

Not only that, but the buoy had travelled an incredible 500 miles south of the 11 March position. (Did it hitch a lift with some passing ship? Note on Robin's file. Check with Department of Transport about shipping movements.)

Back to the drawing board and the continuing saga.

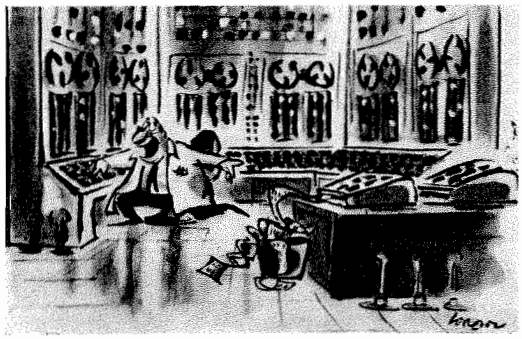
Tuesday dawned with the story looking complete.

Determined to be awkward to the last, the buoy then initiated another cable from France by ceasing to transmit on 26 March.

Robin's typist was by this time in a state of nervous frustration but bravely produced the final version which was then delivered to various science writers on Thursday 11 April.

Over Easter a final blow was struck. Following an appeal to mariners by George Cresswell, who had been supervising the movements of the wandering one, the buoy was picked up by the 'Cape Pillar', a Department of Transport vessel, a kilometer south-west of Gabo Island and about 160 km from its last point of contact on 26 March.

Robin and his typist went back to the drawing board. The postscript went out to the media and the buoy came home to rest.



'Oh you press the button down, the data goes 'round and around, Whoa-ho-ho-ho-ho-ho, and it comes out here'

— Courtesy 'Punch'

Jim Whittem for USA

Mr Jim Whittem (above) has been appointed Scientific Attache in Washington. He will replace Dr Peter Muecke who will return to Australia about the middle of this month.

Mr Whittem, who will take up his duties in Washington on 14 June, joined CSIRO as Officer-in-Charge of the Animal Health Research Laboratory at Parkville after spending some years as Director of Animal Husbandry, Northern Territory Administration.

In 1968 he transferred to Head Office as Secretary of the newly formed Commonwealth and States Veterinary Committee.

LONDON LOG

Recent trends in the UK reflect a growing concern that government research should be more directly related to national needs.

The outcome is being watched with great interest, both with the UK's research councils themselves and by those affected by their activities, especially the scientists, our ASLO report says.

New proposals for research in the UK follow acceptance in 1972 by the Government of the Rothschild recommendation that applied research should be organised in accordance with the customer-contractor principle. As might be expected there has been endless speculation about the likely consequences.

While it is yet too early to make a full assessment of the impact of the new scheme which has been operating only since July, attention has been drawn already to the fact that some government departments (the customers) have appointed highly competent chief scientists and supporting staffs to guide them in placing research contracts.

Representatives of customer and contractor institutions have also been serving together on Requirements Boards thereby enabling the placement of research contracts that are more realistic than would be otherwise expected.

On the other hand some of the contractor laboratories anticipate financial embarrassment. The 1972-3 NERC Annual Report predicted that 'serious difficulties will arise . . . in fitting . . . programs, scientific skills and facilities to departmental responsibilities in such a way as not to destroy the balance of fundamental and applied research'.

This situation arises from the proposal to transfer a significant proportion of NERC funds to four customers: the Department of Trade and Industry, the Department of the Environment, the Ministry of Agriculture, Fisheries and Food and the new Nature Conservancy Council.

Of the other four councils, the Agricultural Research Council and the Medical Research Council will also undertake contracts for research.

Considerable sums will be transferred from them to their customers, the Ministry for Agriculture, Fisheries and Food and the Department of Health and Society Security, respectively.

Fortunately a close relationship already exists between each of these councils and their corresponding ministry or department and no serious difficuty is anticipated.

The Social Science Research Council, established about five years ago, is regarded as too young an organisation to become involved in the new scheme.

The Science Research Council is likewise unaffected because, according to a government report, its funds are 'largely spent on university research grants and on the maintenance of large-scale equipment and facilities for the use of university researchers and postgraduate student support'. — F.G.L.

Scientists in China

Cont'd from page 1

look at both rural and urban projects.

'We were impressed by what we saw of their science and technology and noted that they were concentrating on applied science,' Professor Robertson said.

'Great importance was attached to the way scientists working on industrial research would go into the factories and those undertaking agricultural research would spend time in the communes in rural environments.'

Professor Robertson found that the individual Chinese knew a great deal about the work of Australian scientists involved in their disciplines. For instance, he said, the work of Dr Fraser Bergersen, Dr Keith Boardman and Dr A. J. Anderson of Plant Industry was well known to them.

Radio astronomy

Astronomy and physics were the main interests for Dr Paul Wild, Chief of the Division of Radiophysics, when he moved out into his specialised field.

At the Institute of Physics in Peking he and Dr H. A. Buchdahl inspected the design and building of apparatus for the generation of plasmas and associated problems of high-temperature generation and focusing. The equipment the Chinese had was advanced in its design and the Australians had been impressed.

'But we were told they had a long way to go before having a chance to reach their ultimate goal of controlled thermo-nuclear fusion,' Dr Wild said.

At the Peking observatory their scientists were concentrating on astrometry, solar physics and radio astronomy. The 60 cm reflector telescope they were using had been built entirely in China, a fact of which they were very proud.

Australian influence

Dr Wild also visited a radio astronomy observatory located about 100 km from the capital. 'Work was started on this observatory in 1964 and I gather was held up when the cultural revolution took place.

'It has now restarted but I could see they are still considerably influenced by Professor W. N. Christiansen of Sydney University who acted as their consultant when the project was initiated. They have plans for converting the instrument to a more advanced design,' he said.

At the Nanking Observatory Dr Wild found they had a magnificent collection of ancient astronomical instruments.

Sir Rutherford Robertson

'Not all of them were original but they included a 300-year-old replica of a celestial sphere which had its origin 1800 years ago.

'They also had two armillary spheres, the main astronomical instrument in use 2000 years ago. They were beautiful examples of the combination of art and science.'

Another instrument, dated 1437, was a gnomon. This was used as long ago as 3000 years to determine the seasons.

'The Chinese were always tremendously interested to learn what they could. I was asked to give a number of talks and I found that when this was requested they didn't just want a half hour run-down on things,' Dr Wild said.

'They expected me to deliver a three and a half hour oration on each occasion.

'I was supplied with green tea, a blackboard and a good interpreter and was left to it. The Chinese took copious notes and they asked some pretty shrewd questions.'

While the Australians were in China it was arranged that two of their post-graduate students would spend six months here. They are expected to arrive this month and will spend five months with Professor Christiansen and then one month at Parkes and Culgoora with the Division of Radiophysics.

Delegation from Iran

A delegation of eight Iranian Government officials, mainly agricultural experts, recently visited Canberra, Sydney and Melbourne and during their time in the ACT had discussions at Head Office. The delegation held talks with the Prime Minister, Mr Whitlam, the Treasurer, Mr Frank Crean, and the Minister for Overseas Trade, Dr J. Cairns. His Excellency Hassanali Mehran, Iran's Deputy Minister for the Economy, is shown here talking to the Chairman of CSIRO, Dr J. R. Price.

Around the Divisions

Animal Health

Dr L. E. A. Symons of the McMaster Laboratory of the Division of Animal Health, has had the degree of Doctor of Science conferred upon him by the University of Adelaide.

Dr D. B. Adams, of the same laboratory, has recently been awarded the degree of Doctor of Philosophy of the University of Oxford.

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Mineral Physics

Dr Michael Duggin, of the Minerals Research Laboratories, Ryde, is overseas on a five-month trip to investigate current progress in techniques of remote sensing. Mike heads the group who are studying techniques of aerial and satellite remote sensing, and who are generally regarded as being among the leaders of this research in Australia.

While he is away, Mike is visiting government, academic and private centres involved in this field and his itinerary is taking him from New Zealand where he had discussions with DSIR, to the United States, Canada, the United Kingdom, Italy, Israel, South Africa and hopefully, Russia.

He will attend several conferences while he is away and will give papers at two of them.

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Animal Physiology

Dr George Alexander of the Division of Animal Physiology at Prospect has been awarded the medal of the Australian Institute of Agricultural Science for his work on lamb losses in Australia.

He has gained wide recognition for his research into the problem which is of vital importance to the pastoral industry, both here and overseas.

Dr Alexander is noted for his investigations into environmental and nutritional factors in neo-natal mortality, behaviour patterns in ewe and lamb, physiology of the foetal lamb, temperature regulation in lambs, sources of heat loss, influence of birth-coat type, and lactation in the ewe.

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Textile Industry

Dr M. Lipson, Chief of the Division of Textile Industry, Geelong, is spending five weeks visiting research organisations and industries in the United Kingdom, Europe and the United States. While he is in England he will attend the International Wool Secretariat R & D Committee Meeting at Ilkley in Yorkshire.

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Environmental Mechanics

Dr P. J. (Phil) Mulhearn recently joined the Division of Environmental Mechanics at Canberra where he is co-ordinating the Division's wind-tunnel work and conducting research in fluid mechanics.

Dr Mulhearn, whose degrees in science and engineering and doctorate were all attained at the University of Sydney, came to CSIRO from the RAN Research Laboratory and before that the Department of Applied Mathematics and Theoretical Physics of the University of Cambridge. He was, however, no stranger to the Pye Laboratory. While with the RANRL he was a welcome — and useful — visiting worker in the Pye wind tunnel on a number of occasions.

Success for 'fun runners'

Members of the team from the Division of Protein Chemistry recently competed successfully in Melbourne's first "fun run". The event, organised by HSV7 and Coca Cola attracted several thousand entrants and competitors ran, jogged and walked the 15km distance between Melbourne and Brighton. The Division's team gained second place behind a group representing the Professional Runners Association. Proudly displaying their medallions (from left) are Peter Nicholls, Don Williams, Bob Downes and Damian Quirk.

CSIRO staff to visit Moscow

A group of CSIRO scientists will travel to Moscow this month for the XII International Grassland Congress to be held there between 11-20 June.

The general theme of the Congress will be soil-plant-animal products.

Plenary session themes cover a wide range of topics including:

- modern methods of development and evaluating of varieties and hybrids of plants for seeded pastures and meadows
- the mineral nutrition of pasture and meadow plants and the methods of determining their fertiliser requirements
- scientific and technical progress in the field of forage conservation and its storage
- new experimental methods as applied to pastures and meadows.

The Congress will provide simultaneous translations for participants in Russian, English, German, French and Spanish and summaries of papers will be published in Russian and English.

A number of tours have been arranged for delegates which will give them an opportunity to visit research institutions, experimental stations, educational establishments of higher learning, state and collective farms, museums and places of cultural and historic interest.

The program also includes a special itinerary for women attending the conference and among activities organised for them are visits to the Exhibition of Economic Achievements, a tour of the Moscow Fashion House and an excursion to the Kremlin.

CSIRO staff who expect to be attending the Congress include Dr F. H. W. Morley, Mr P. Broue, Dr R. N. Oram (Plant Industry); Mr M. L. Dudzinski (Mathematical Statistics — Plant Industry); Mr J. C. Noble and Dr G. W. Arnold (Land Resources Management); Dr J. L. Wheeler (Animal Physiology); Dr E. M. Hutton, Dr M. J. Payne and Dr R. J. Clements (Tropical Agronomy).

It is understood that several members of the staff who are already overseas on leave are also likely to attend.

ASCA meeting in India

Dr M. F. C. Day, a member of the Executive, has returned to Canberra after a visit to India for the third meeting of the Association for Science Co-operation in Asia (ASCA).

Both Dr Day and the other Australian delegate, Mr E. E. Adderley, Scientific Counsellor in Tokyo, attended the conference at the request of the Australian Minister for Science, rather than in their CSIRO capacities. Dr Day was appointed Vice-Chairman of the association.

The main aims of ASCA were to identify areas of mutual interest in the field of science and technology and to devise means and mechanisms for providing solutions through active co-operation of member countries, Dr Day said. In the main, these seemed to revolve around food, energy and cheap housing.

While he was in India, Dr Day attended a reception at the President's Palace and met President V. V. Giri. He also talked with Professor Y. Nayudamma, secretary to the Government and Director-General, Scientific and Industrial Research, who is expected to visit Australia next year when the fourth conference of the association will be held in Canberra.

Dr Day also visited the Indian CSIR, their National Physics Laboratory and the Indian Council of Agricultural Research.

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In a sandwich bar: '*If you wish to extinguish your cigarettes in your plate, the waitress will gladly bring you your food in an ashtray.*'

'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.

Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478 or Wendy Parsons, 48 4227.

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July 1974

CSIRO to continue research into forest products

Any suggestion that CSIRO either wants to pull out of its research on forest products or is planning to do so has been dismissed by the Chairman of the Organization, Dr J. R. Price, as 'sheer nonsense'.

Some straight talking on the role of CSIRO and its involvement in this sphere came from Dr Price when he gave the address at the Bill Gottstein Memorial Dinner in Melbourne.

The function was arranged by the Gottstein Memorial Trust set up to honour the memory of Mr Bill Gottstein, a member of the former Division of Forest Products who was killed in an accident in Papua New Guinea in 1971.

The dinner was attended by 125 people representing Australian forest product industries and their associations, forest services, CSIRO staff and other people interested in the rational utilisation of Australian forests.

CSIRO, Dr Price said, wanted to see its work on forest products carried out in the way that was the most efficient and best met the national needs.

There was no intention of diminishing practical technical assistance to the timber industry or the research which would ensure that this continued in the future.

The newly-formed Division of Chemical Technology was continuing work on the assessment of forest resources for paper manufacture and the program of controlled burning to preserve forest resources.

The Division was also looking ahead and recognised the dangers of continued exploitation of the country's resources.

'Renewable resources, as our forests are, are assuming greater importance as demand rises and non-renewable resources of the world become depleted,' Dr Price said.

The full text of the Chairman's speech given at the Bill Gottstein Memorial Dinner will be published in the July issue of the Australian Forest Industries Journal. It will also be available at a later date in the libraries of all Divisions.

'Two ways to produce more from the same area are to grow and use the traditional crop, say trees, more efficiently or to grow a substitute crop that yields more than the traditional crop.

'While CSIRO is concerned with the more efficient growth and use of the traditional crop (the forest), the Division of Chemical Technology is also interested in the total utilisation of plants to supply not only fibre but other raw materials that can be used, for example, in animal feeding.'

Eight Divisions

Professional officers involved in the Divisions of Chemical Technology and Building Research, which was also continuing research programs into forest products, totalled about 90, Dr Price said.

'I suspect some of you may think that this is our total research effort, but this isn't so. There are almost 70 other professional staff involved in another six Divisions.' (Land Use Research, Chemical Engineering, Land Resources Management, Soils, Entomology and Plant Industry.)

'Not all are engaged in projects in a full-time capacity but this represents a considerable research effort which has expanded in recent years and is still doing so.'

Communications

Discussions he had had recently with the Timber Producers' Council had revealed a breakdown in communication between the Council and CSIRO, Dr Price continued.

He recognised this was a serious situation and said attempts would be made to rectify it.

'The timber industry over a long period of operation of the former Division of Forest Products had established effective communication with that Division; it knew where to go, it knew the people and it could talk to them.

'It is now uncertain where to go for advice and assistance and is worried that more than one point of contact may be necessary.'

Dr Price said he hoped the new Forestry Newsletter would help overcome the communication barrier and that the new sub-committee set up by the Joint Committee on Forest Industries would be successful in its liaison with CSIRO forest researchers.

The Chairman again referred to the subject of communication later when he was presented with a number of questions and statements on which he was asked to comment. One of these read:

'Industry is concerned that the CSIRO Executive may not always be completely informed about its views and requirements. Senior people in the industry are wondering what channel might be most appropriate for making these views heard in the right quarter.'

Cont'd on page 4

Margaret Canny, who since 1971 has been typing 'Coresearch' copy and has managed to meet every deadline and still get a thousand other jobs done for the Central Communication Unit, has left Canberra on an extended visit to Europe. The Unit said its farewells in the appropriate style and Margaret couldn't have been left in any doubt of how much she was appreciated. Now we have to find someone to replace her. She set a high standard that's going to be difficult to match but we're looking for volunteers. If you'd like to work in a public relations set-up and are the girl we're looking for, please call us.

She's Miss Woden Plaza

Don't tell us that the RAO in Canberra doesn't know how to pick 'em. Eighteen-year-old Vicki Hawthorne of the Overseas Expenditure Section at Head Office has just been chosen as Miss Woden Plaza 1974. As a result she has been given a couple of return air tickets to London and is $1000 richer.

Staff Section is keeping Vicki's vital statistics a close secret and the telephone number, removed from the Directory, is available only to those making a contribution to the Head Office Christmas party fund. (Or so we've heard.)

And don't all rush to offer to accompany her to London . . . Vicki has decided to take an old school friend, Sheelagh Brennan, with her. The girls are planning to have nearly six months away and since Vicki is doing a degree in British history and political science at the ANU she plans to make as much use of her time as she can to visit places of historical interest. The girls say Paris and Moscow are also 'musts' on their itinerary. (Picture: courtesy 'Canberra News'.)

Chooks 'go down the drain'

CSIRO has taken something of a battering this year with flood losses. The latest entry in the statistics shows the loss of 150 prestige chooks.

The property of the Division of Animal Health, the fowls were specific-pathogen free ones, bred for special experiments. The fowls were bred to be disease-free and were used for research on infectious diseases which attack poultry.

Apart from a year's work literally going down the drain, the financial loss taking in costs of birds, labour and buildings has been assessed at $10,000.

First indication of the trouble came when staff at the Maribyrnong field station woke in the morning to discover that the Maribyrnong River had flooded during the night.

'At that stage,' said Bill Snowdon who is in charge of the project, 'the river was rising a foot every 10 minutes. Part of the trouble was the excessive rain but the rest was caused by the tide washing back and high winds in the area.'

Two members of the staff who live on the property, Alex Cameron and Gerry Lawson, and their families, did a fast survey and discovered that while their homes were safe, the hens were not.

Although the fowls were kept in special virus isolation units, the buildings were not absolutely waterproof. Air was taken into the units through special vents and the water had penetrated through both these and the drains, drowning most of the fowls.

'In one unit where the water was only two feet deep, we saved 21 birds,' Bill said.

The 'chapels' — named for their appearance — in which the birds had been housed, were only temporary premises used until the new building program is completed. Work is scheduled to begin on this during the 1974-75 financial year.

The loss is a special blow for Dr Trevor Bagust who has been doing most of the research work on the birds.

'We'll now have to start the program all over again, using those fowls that we saved,' Bill said, 'but it means everything gets delayed.'

NSL re-organised into new laboratory

The two Divisions, Physics and Applied Physics, which together have made up the National Standards Laboratory, have been re-organised into one under the leadership of Mr F. J. Lehany, Chief of the Division of Applied Physics.

The two will now be called the National Measurement Laboratory and Mr Lehany will have the title of Director.

Dr R. G. Giovanelli, who asked to be relieved of his post as Chief of the Division of Physics so that he could concentrate on research work, has been made a Senior Research Fellow in solar physics.

Initially at least, he will be located at the Laboratory but at the end of August he will leave on a year's overseas visit.

Dr Giovanelli plans to first visit the University of Hawaii where he will be working with two former Physics staff, Dr John Jeffries, now head of the Department of Astronomy there, and Marie McCabe, a senior member of the department.

From there he will spend eight months at Kitt Peak National Observatory at Tucson in Arizona where he will meet up with another colleague, Dr Don Hall, who earlier held a CSIRO studentship in Physics.

Dr Giovanelli's last two months will be spent in Europe where he hopes, among other things, to confer with staff at L'Institut d'Astrophysiques.

At the time of going to press some aspects of details of internal administration of the new Laboratory were still being worked out, but the two administrative groups have already been welded together. A scientific program review committee has also been established and comprises Mr Lehany and Drs A. M. Thompson, G. K. White, and W. R. Blevin as the three co-ordinators.

Before the amalgamation took place, the staff of both Divisions was kept informed of the proposed changes and had the opportunity to have discussions on the subject.

The operations of the Laboratory will continue at their premises on the campus of Sydney University until their new building at Bradfield Park is completed in 1977.

Staff train in alpine setting

Dr Alan Pierce, a member of the CSIRO Executive got a chilly reception when he arrived at Thredbo Alpine Hotel to take a look at a senior staff management course in action. His arrival coincided with a two-feet fall of snow.

Much to the reported dismay of the participants, Thredbo was snowbound and the 15 members, the session leader, Dr Evan Davies, and the training officer, Ian Harvey, were forced to remain in the area for a further day.

The course was part of the CSIRO senior management training program which is run four times a year for senior scientific, technical and administrative staff.

At these the role of human factors in management is examined by discussing the theories of prominent industrial psychologists such as Herzberg, Likert, McGregor and Reddin.

A number of case studies are analysed by the participants and time is also devoted to acquiring some skills in industrial counselling.

Forty-five staff have attended the three courses run so far and nominations are sought regularly from Divisions.

Some of the course participants with Dr Pierce in front of the Head Office vehicle that was shortly to disappear under the snow: (from left) Dr Ken Baird, Textile Physics; Mr Tom Wignall, engineer, Chemical Physics; Dr Bob Newbold, Meat Research Laboratory; Mr Ian Whiting, Head Office; Mr Terry Calahan, Minerals Research Laboratories; Dr Alan Pierce; Mr John Dover, Applied Geomechanics; Dr Evan Davies, Senior Lecturer in Industrial Psychology, University of New South Wales (the course leader), and Dr Dick Lang, Irrigation Research.

Coresearch under scrutiny

The effectiveness of 'Coresearch' as a means of communication among the staff of CSIRO, its content, size and distribution were among many aspects discussed when the Coresearch Advisory Committee met for the first time at Head Office in Canberra.

Those present were Messrs G. R. Williams (Chairman), Manager, Central Communication Unit; G. Blackburn, SPRS, Division of Soils, Adelaide; R. W. Cullen, AO, Division of Building Research, Melbourne; A. T. Dunn, TO, Division of Land Use Research, Canberra, and R. Shearstone, Senior Laboratory Craftsman, Division of Radiophysics, Sydney. Mr C. D. Kimpton, Ms M. Guthridge (secretary) and Ms Dorothy Braxton (editor), all of the Central Communication Unit, also attended.

The Committee was set up last year following a reader survey undertaken earlier to find out from staff members how they reacted to 'Coresearch' and what — if any — changes they might like to see.

Members were appointed in their capacity as readers and did not represent Divisions or staff associations.

The size, format and frequency of publication came in for discussion, but it was agreed that before any recommendations were made the matter should be further investigated.

During discussions on distribution, it was found that 'Coresearch' was not always available in sufficient numbers for each member of the staff to have his own copy. It was pointed out that where Divisions, Laboratories or Units were not receiving sufficient copies, up-dated numbers should be sent to the Editor.

A welcome to members of the committee was given by the Chairman, Dr J. R. Price, who spoke briefly on the importance he attached to 'Coresearch' as a form of communication within the Organization. 'We look forward to seeing you make a real contribution so that "Coresearch" can be more effective,' he said.

Picture: Coresearch Advisory Committee meets at Head Office. From left: G. Blackburn, R. Shearstone, M. Guthridge, R. W. Cullen, G. R. Williams, C. D. Kimpton, D. Braxton and A. Dunn. (Photo: AIS.)

Mr. B. Beresford Smith retires

The man who for the last 12 years has been responsible for the implementation and management of CSIRO's works programs, Mr Brian Beresford Smith, has retired from the Organization.

After a long career as an engineer, he has decided to take on the new role of a country man and has bought a property near Wangaratta in Victoria where he plans to grow vealers.

Mr Beresford Smith joined CSIRO from the Commonwealth Department of Works where he had been principal engineer. Before that he had worked both as an assistant city engineer in Launceston and Hobart and as a consultant in private enterprise.

Based at Albert Street in Melbourne, Mr Beresford Smith as Assistant Secretary, Works and Buildings was responsible for a number of the Organization's major building projects, particularly the National Measurement Laboratory now under construction at Bradfield Park, the Western Australian laboratories at Floreat Park and the Long Pocket Laboratories at Indooropilly.

He has also been working on the development of the chemical laboratories on the Clayton site.

Colleagues met to farewell him at several functions. A Head Office dinner was held in Canberra for him, there was a farewell gathering at Head Office arranged by the Chairman, Dr J. R. Price, and staff, and another similar occasion was held at the RAO in Melbourne when members of the Building Section and others at Albert Street had a chance to say goodbye and wish him well.

Farrer Medal

Dr Helen Newton Turner, one of Australia's leading women scientists, has been selected as the Farrer Memorial Medallist for 1974. The presentation will be held in September. Dr Turner who retired last year has been granted an extension of her honorary research fellowship and continues to be based at the Division of Animal Genetics.

Death of Minerals Chief

A former Chief of the Division of Mineral Chemistry, Mr Richard Thomas, died recently in Melbourne.

Chemist, naturalist, lover of minerals and raconteur extraordinaire, Dick Thomas was the man responsible for initiating research in CSIRO on minerals as industrial raw materials.

After graduating at the University of Adelaide in 1924, Mr Thomas did post-graduate work as a mineralogist under the direction of Sir Douglas Mawson.

He then spent three years as chemist with the Australian Radium Corporation, where he was responsible for devising methods for treating the complex ore mined at Radium Hill in the Flinders Ranges, an area which he visited frequently and for which he retained a great attachment.

In 1928 he joined Professor T. Brailsford Robertson in the unit at the Biochemistry Department of the University of Adelaide, which soon afterwards became the CSIR Division of Animal Nutrition.

With Brailsford Robertson and later with H. R. Marston, Mr Thomas played a distinguished part in the research on the role of trace elements in animal nutrition that culminated in solution of the problem of 'coast disease' in sheep.

In 1940, when Dr (now Sir Ian) Wark was establishing the Division of Industrial Chemistry in Melbourne, he invited Mr Thomas to set up a Section of Minerals Utilization, the forerunner of the present Minerals Research Laboratories. This Section became the Division of Mineral Chemistry of which Mr Thomas remained Chief until he retired in 1961.

Wool research funding to be investigated by IAC

A decision made by the Australian Government to refer the financing of wool research and promotion to the recently established Industries Assistance Commission could have far-reaching implications for CSIRO.

Last November the Government announced its arrangements for financing wool research and promotion under the Wool Research Trust Fund for the three years 1974-75/1976-77. These provisions were based on the general proposition that the wool research program in CSIRO, financed from the Fund, would be continued throughout the three-year period at the 1973-74 level.

At the same time Cabinet also decided to refer the question of rural research and promotion generally to the Commission 'for inquiry and report'.

Later, in April this year, the Government decided to make the issues involved — research and promotion — into two separate references.

In reference to the IAC under the title 'Financing Rural Research,' the Prime Minister, Mr Whitlam, asked it to consider whether funds should continue to be provided by the Australian Government or assist in financing rural research and if so,

- what should be the nature and extent of the assistance provided by the Australian Government
- what criteria should be used in determining and apportioning research expenditure. (For the purposes of this reference, rural research includes research into fisheries.)

The Commission is required to furnish its report to the Government not later than June 1976. Although no detailed timetable has yet been announced, it is expected that the hearings, which under the terms of the Act will be open, will start in January next year.

CSIRO evidence

In view of its major involvement in rural research in Australia, the CSIRO Executive felt it was necessary for the Organization to prepare written evidence for submission to the Commission and to participate in the hearings.

The Executive has placed the responsibility for the preparation of its submission in the hands of a consultative panel comprising Dr J. A. Allen, Executive Officer (Chairman), Drs E. G. Hallsworth, L. T. Evans, K. A. Ferguson, M. Lipson and Mr Michael Tracey.

The panel will be assisted by Professor W. P. Hogan, Professor of Economics in the University of Sydney, whose services have been retained as an economic consultant.

The working party which will undertake the detailed preparations comprises Mr A. W. Charles, Dr J. R. Yates, Mr R. W. Viney and Mr B. Johnson, all of Head Office in Canberra, under the leadership of Dr Allen.

References

'The boundaries of what is encompassed by the Government's term "rural research" have not been defined and will rest primarily with the Commission itself,' Dr Allen said.

'While undoubtedly the intention is to include research related to rural production and the processing of rural products, it could, of course, include other rurally related research not explicitly connected with rural industry. Fisheries is explicitly included in the reference, though its connection with "rural activities" is not readily perceived.'

As far as CSIRO was concerned, Dr Allen said, the reference covered research activities funded both from the Consolidated Revenue Fund and from various Rural Industry Research Funds.

It would also formally include research undertaken with Commonwealth support in universities, colleges, State Departments of Agriculture and other similar agencies.

It would not, however, include research undertaken by State Departments with funds made available under appropriations of State Parliaments.

'By this reference under the IAC Act 1973, the Government has effectively defined the funding of research from the Consolidated Revenue Fund and Rural Industry Research Funds as assistance to an industry. It may therefore be said to cut across some aspects of the Science and Industry Research Act 1949-73,' Dr Allen said.

'The reference also opens up the possibility that at some future time other areas — for example, minerals research or research related to a secondary industry — may be made the subject of public inquiry by the IAC.'

Public scrutiny

A further point was that CSIRO's program of rural research came directly under public scrutiny to be evaluated in terms of other Government priorities and activities not necessarily of a research kind.

'It should be noted that the IAC is an advisory body and the Government may or may not accept recommendations which are made to it from the Commission,' Dr Allen added.

All Divisions and Laboratory Groups have been advised of these developments and the Chiefs and Chairmen have contributed ideas and supporting papers to the consultative panel. The relevant Divisions will be asked at a later stage to provide detailed information in some specific areas.

For your information

Did you catch up with these information and policy circulars? When space permits 'Coresearch' will now list these brief summaries of circulars. This is in response to a request from staff who have reported that they do not always see such statements.

Because of the deadline for 'Coresearch', of necessity these will not be up to date, but each Division has copies of the circulars listed and later ones.— Editor.

Information circulars

No.

74/26 National Wage Case 1974

74/27 Overseas Procurement — Reprints
(introduction from 1.7.74 of direct ordering for reprints of articles by CSIRO authors in overseas publications, instead of through Australian government overseas offices)

74/28 Division of Tropical Agronomy — Acting Chief
(Dr E. F. Henzell 1.5.74 to 30.10.74)

74/29 Reporting of Motor Vehicle Accidents
(introduction of new report forms for use in all accidents involving CSIRO motor vehicles)

74/30 Bursaries at Geelong Church of England Grammar School for sons of officers of CSIRO
(applications closed 27 May)

74/31 Division of Applied Geomechanics
Dr G. D. Aitchison resuming as Chief;
Dr C. M. Gerrard appointed Assistant Chief — with effect 27.5.74)

74/32 Selby Fellowship
(Applications by letter — close 30.7.74)

74/33 Australian Meat Research Committee—
Awards for Postgraduate Study at Australian universities or overseas
(Application forms available from Head Office; returnable on or before 31.7.74)

74/34 Claims for Taxation Concessional Allowance in respect of dependants
(Requirement to lodge new claim for year ending 30.6.75)

74/35 (not issued)

74/36 Division of Textile Physics — Acting Chief
(Mr A. R. Haly 21.5.74 to 30.6.74
Mr E. G. Bendit 1.7.74 to 20.7.74)

74/37 Division of Building Research — Acting Chief
(Dr. F. A. Blakey to 21.6.74)

Policy circulars

No.

74/20 Terms and Conditions of Employment
Paragraph 62 — Overseas visits
(Daily rates of travelling allowance — short-term visits)

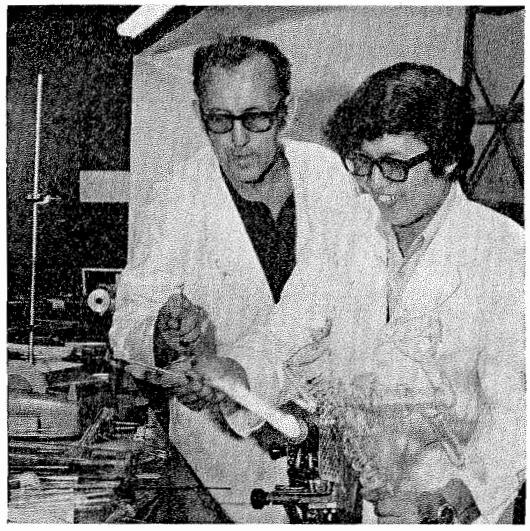
74/21 Allowances for intermittent motor driving duties
(T&C Paraograph 88A)

Portrait for Division

A portrait of Sir David Rivett has officially been donated to the Division of Chemical Physics, Melbourne, by Lady Rivett.

The portrait, painted by the artist, Max Meldrum, has been hung in the Chief's office for some time but it was only recently that Lady Rivett made a gift of it to the Division.

Sir David who was the first Chief Executive Officer and later Chairman of CSIR, took a personal interest in the early development of the Organization's research in chemical physics and his association with the Division was recognised by incorporating his name into the title of the Division's premises, the David Rivett Laboratory, at Clayton.



Karoly Grosz, senior glass blowing technician of the Division of Chemical Physics, instructs Hussin Bin Omar, a United Nations exchange student from Kuala Lumpur, Malaysia, in the art of glass blowing. Hussin is spending a year at the National Measurement Laboratory to study scientific glass blowing techniques but recently had a week at the Division.

Letter to the Editor

Sir—

Other than T. G. Brock's amusing letter in 'Coresearch' last September I have seen very little reference to the possibility of a change in name of the Organization.

In view of the word 'Commonwealth' falling into disfavour as part of the description of Australian Government Departments and Authorities, I find this strange.

The inclusion of the word 'Commonwealth' in our title stems from 1948 when the Council for Scientific and Industrial Research became the Commonwealth Scientific and Industrial Research Organization. Sir David Rivett favoured the retention of the well known abbreviation CSIR and hence the adoption of the word 'Commonwealth'.

I thought at the time that it was in a way a pity not to have made a clean break and to use the title Australian Scientific and Industrial Research Organization. Experience since then has only reinforced this thought.

During overseas trips I have found that foreigners are sometimes confused by the title and wonder whether we are an agency of the Commonwealth of Nations — they are not always aware that we are an Australian organization.

One disadvantage of the proposed title would be that its initial letters when spoken as a word could be confused with ASIO. To avoid such confusion I propose that we be known as the Australian SIRO, or SIRO for short.

This abbreviation is already well known in several patent names, and our logo could consist of the word 'Australian' in small capitals above four large capitals, so:

AUSTRALIAN
SIRO

There may be some who would agree to retain CSIRO as a name without it being thought of as the initial letters of any words. This is sometimes done in the case of companies, whose original name is no longer a reflection of their present activities, e.g. the name of the former Colonial Sugar Refining Co Ltd is now CSR Limited and this is one reason why we should not be CSIRO — we are already sometimes mistaken for sugar manufacturers.

Another reason is that the word CSIRO does not fall easily off the tongue.

What do others think?

—E. R. BALLANTYNE,
Division of Building
Research, Highett, Vic.

'Coresearch' would welcome comments from present and former members of staff, or from interested readers outside CSIRO.—Editor.

'Yahoo fauna' of Heron

'The yahoo fauna of Heron Island' isn't as wild as some of the local inhabitants on the island would have us believe.

In the May issue of 'Coresearch' we reported that *Puffinus pacificus* migrated from the island to the Arctic Circle.

Our information was supplied by the 'islanders' but David Purchase, Division of Wildlife Research and Secretary of the Australian Bird-Banding Scheme, says that during winter *Puffinus pacificus* (a species of muttonbird if you don't like the formal touch) which breeds on Heron Island and other islands off the coast of Queensland and New South Wales, probably disperses only as far as the warmer waters to the north of Australia.

David bases his evidence from observations and the recovery of banded birds.

Says David: 'Of the five *Puffinus* species (all of which are commonly called mutton birds) that breed in Australia only *Puffinus tenuirostris* and *Puffinus griseus* are known to migrate to the cooler seas of the North Pacific Ocean and Bering Sea.

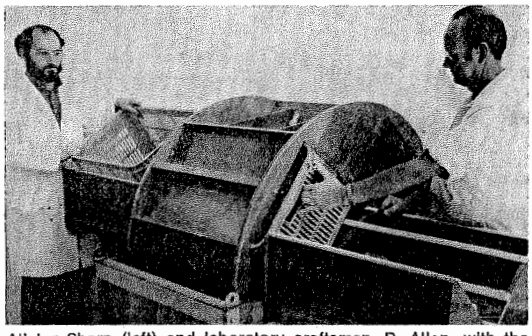
Only *Puffinus tenuirostris* are known to go as far north as the Arctic circle (to 71°N).'

Prawns provide family interest

Prawns are frequently the subject of conversation among Australians who usually discuss their gastronomical interest in the delicacy with much relish and drooling.

But when Judy Ruello and her husband, Nick, start talking about them their conversation is unlikely to be accompanied by mouth-watering thoughts. They're far more likely to be concerned about black spot, freezer burns, soft shell and other physical defects the crustaceans may have.

All of which comes about as a result of their mutual professional interest in prawns — Judy is a biologist working at the Division of Food Research in Sydney on a grant from the Fishing Industry Trust Account and Nick is a crustacean biologist with the Fisheries Branch of the Chief Secretary's Department in New South Wales.



Allster Sharp (left) and laboratory craftsman, R. Allen, with the prawn dipper they have developed.

'You could even say it's a family affair,' Judy said. 'Nick's father is a wholesale fish and prawn merchant in Sydney. This has proved most useful because he's able to supply me with prawns I need for my work.'

During the past five years Australia's prawning industry has expanded spectacularly and has become a multi-million dollar export earner, apart from its impact on the domestic market.

In that time the technology for handling prawns on board fishing vessels has undergone dramatic changes and mechanically refrigerated sea water (RSW) has replaced ice as the cooling and storage medium on most of the large prawning vessels.

There are many advantages in using this method. Prawns are cooled more rapidly and the tedious and sometimes difficult task of icing prawns at sea is eliminated. Longer trips are also possible since fishermen do not have to store large quantities of ice.

'Prawns stored in RSW look more appetising,' Judy said, 'and have a more acceptable flavour and texture than ice-stored prawns.

'But even so, they have a limited storage life in RSW since substantial physical and chemical changes can occur.'

The Division's prawn research is mainly concerned with finding ways to prevent the formation of black spot or melanosis in the prawns, better ways of storing the crustaceans on board the vessels and better methods of transporting them to domestic processing factories.

'This is all particularly important in an area like the Gulf of Carpentaria,' Judy said, 'where 90 per cent of the catch is sent overseas.

'Black spot, characterised by a blackening of the head, abdominal shell and tail fan, develops in raw prawns. It is caused by enzymes in the prawns which oxidise particular compounds to produce black melanin pigments. It readily develops in dead prawns, especially when they are held under dry refrigeration.'

While prawns with black spot aren't necessarily unfit to eat, it does detract from their consumer attraction. The disease will not develop, however, in freshly caught prawns if they are treated with a solution such as sodium metabisulphite before they are stored in refrigerated sea water.

'Just adding the solution to the sea water though, isn't the answer,' Judy said. 'That method is much less effective than dipping the prawns in it before they are stored.'

Dipping has its problems and takes considerable labour. To overcome this Dr Alister Sharp with whom Judy works, has designed a dipper machine and a prototype has been built by the laboratory craftsmen.

It would be simple enough for a deck hand to operate without specialised knowledge and an entire catch could be treated aboard the trawler.

'We're now in the process of carrying out field trials,' Judy said. 'We feel reasonably confident of success with the eastern king prawns we get around Sydney, but we have yet to prove that it will work with other species and we would still have to convince the industry of the wisdom of installing the equipment.'

For Judy this means more field trips back to places like Karumba and Darwin but if they prove half as much fun as previous trips to the Gulf fishery she'll have no objection to that.

Husband and wife biology team, Nick and Judy Ruello, admire a large model of a prawn made from fibreglass by the Fisheries Branch of the Queensland Department of Primary Industries. (Photo: courtesy 'Australian Fisheries'.)

'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.

Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478 or Wendy Parsons, 48 4227.

Cont'd from page 1

Forest products

To this, Dr Price said he hoped more effective methods of communication would be developed between the industry and the Organization's Divisions.

He had told the Australian Timber Producers' Council that the Executive would be pleased to meet them again whenever they wished. Both sides clearly had to take initiatives.

OECD evaluation

At the end of his address, Dr Price emphasised that while he had been putting forward the CSIRO view, there were other influences which should not be overlooked.

The Government, he said, was seeking advice from outside sources on the best ways of making use of science and technology in the national interests and for this reason had invited the OECD examiners to make a study of Australian resources in this area.

'The final report will not be available for some months,' Dr Price said. 'Consequently I sound a note of caution.

'While CSIRO recognises the importance of forestry research, there may well be other factors which influence the extent to which we can do as much as we might think desirable.'

Please note address

Dr R. M. Smillie, leader of the Plant Physiology Unit of the Division of Food Research, currently Guest Professor at the University of Copenhagen, has received a somewhat unusual award.

The directors of Denmark's National Bank have awarded him an apartment for a period of one year.

The award is a competitive one of international standing open to scholars, scientists and artists and is judged solely on the past achievements of the applicants in their fields of study.

As part of the 150th anniversary of Denmark's National Bank in 1968, the building at Nyhavn 18 was bought by the Bank and the Danish architect Eric Møller commissioned to renovate and furnish the apartments. The building, which was completed around 1770, is a protected National Trust Property and was the residence of Hans Christian Andersen from 1873-75.

A more recent winner of the award was Alexander Solzhenitsyn.

Investors – Take Note

The Laboratories Co-operative Limited in Canberra has announced new rates of interest which become effective from 1 July 1974.

Deposits

1. The rate of interest paid on regular fortnightly deductions from salaries has been increased to 7.2%.
2. Lump sums invested for less than 12 months will now receive interest at the rate of 8% per annum.
3. Amounts of less than $2000 invested for more than 12 months will receive interest at the rate of 8.75% per annum.
4. Amounts of $2000 and above invested for more than 12 months will receive interest at the rate of 9% per annum.

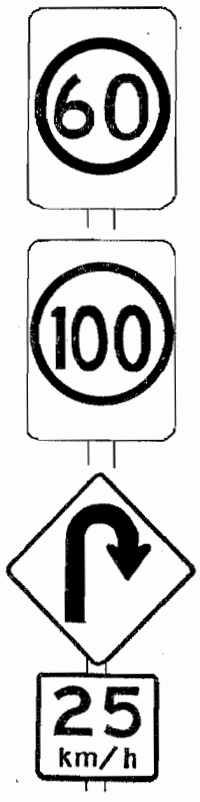
Loans

The interest charged on existing loans remains unchanged at 0.9% on monthly balances. New loans granted after 1.7.74 will be subject to interest at the rate of 1% on monthly balances, which is the equivalent of 6.6% per annum flat — very competitive!

Melbourne ball

The CSIRO Melbourne ball will be held on 9 August at Camberwell Civic Centre when the Allan Eaton Band of 'Powerhouse' fame will be featured. Cost for a double ticket is $20, all inclusive. Melbourne staff should contact their Divisional representatives for tickets. Interstate staff will be particularly welcome and for tickets should get in touch with the ticket secretary, Vi Kingham, at Melbourne RAO.

Road signs go metric on 1 July



100-60-80. Figures like these have appeared at the roadside recently. No, they are not the measurements of a Queensland Gold Coast Meter Maid in centimetres but are typical speed limit signs in kilometres per hour.

Most of you will have seen some of these new signs. They should not cause confusion providing you get into the habit of thinking metric.

Mark or convert the speedometer on your vehicle but do not mentally convert kph to mph every time you come across a metric speed limit sign. The time wasted might make all the difference between being able to negotiate a dangerous bend safely or running out of road.

Get used to thinking of the normal built-up area speed limit as 60 kph not 35 mph and the prima facie open road limit as 100 kph not 60 mph.

Find out where the speedometer needle points at these speeds in any vehicle you drive — 80 kph for 50 mph is a good figure to know because it is often at or near the centre position on the dial and, unlike the other limits, is an almost exact conversion.

For those who like to travel faster than 100 kph when it is safe to do so, familiarity with the 120 kph (75 mph) position might be helpful as well.

Once you know the needle position at each of these speeds it becomes a simple matter to estimate other speeds. Almost as easy as telling the time by a clock without dial numbers.

Gil Barnes
Safety Officer

Printed by CSIRO, Melbourne

coresearch 183

Produced by the Central Communication Unit for circulation among members of CSIRO staff

August 1974

Rotary Club honours CSIRO's 'bird girl'

Eight kilometres off the coast of Fremantle is the isolated, rocky island of Carnac. For most of the year its sole inhabitants are thousands of sea birds, hundreds of tiger snakes and some seals which live around its lonely beaches.

But for one week in every three during the last two years Carnac has had one regular visitor — Lexie Nicholls (right), a technical officer from the Division of Wildlife Research's Helena Valley laboratory.

Lexie's interest on the island is the birds, especially the Western Australian silver gull. For a long time it was assumed that like other silver gulls throughout Australia the ones which used Carnac as their nesting ground bred only once a year.

Then some years ago Lexie had a pair in captivity in her backyard hospital for distressed birds and she was astonished to find the gulls had bred twice.

'We'd noticed that there were two breeding peaks on the island,' Lexie said, 'but until 1972 when I started my studies it was assumed there were two different nesting times... that is, some of the birds were laying their eggs in the autumn and others in the spring.'

Proving the theory to be correct has taken a lot of time and patience, and for Lexie, a great deal of discomfort — and a great deal of satisfaction!

During all her visits to the island, Lexie has lived on her own in pretty rugged conditions. She makes use of a couple of tents and pitches them behind some dunes where passing fishermen won't see them and come investigating.

Sanctuary

She has had her moments. Carnac is a tiger snake sanctuary and after two years of such company she says familiarity has not made her any the less fearful of them.

During the last 16 years Lexie Nicholls has looked after more than 14,500 distressed birds in the Perth area, almost entirely at her own expense. The Perth Rotary Club has recognised her efforts to help wildlife and has presented her with its 1974 vocational service award. In the picture (right) Lexie is seen with the award and one of her favourite gulls.

'I can accept those that lie on the ground. The ones I'm not so happy about are those that drape themselves through the bushes and hang like drooping branches. I have to brush past them and I'm sometimes frightened about what could happen.

'I admit there have been a couple of times when I've just sat in my tent in a cold sweat and tried to pluck up courage to go out among them.'

Fortunately, Lexie is a qualified nurse and well used to living on lonely islands so that Carnac holds many more joys than terrors for her and for the most part, she is so completely absorbed in her studies that she gives little thought to its more hazardous aspects.

Lexie joined CSIRO 15 years ago when she felt she needed a change from hospital life. A chain of circumstances led her to work for Dr Dom Serventy, then of the laboratory, on his mutton bird studies.

Dedication

From then on she was committed — not just to birds, but to working for Dr Serventy. Even today, although he has been away from the Division for some time, she still saves her leave and takes off once a year at her own expense to live by herself on an island in Bass Strait.

There she continues the observations Dr Serventy began and which led to the program on the migration of the short-tailed shearwater.

Lexie has published scientific papers on her own work with birds, but it is not for these that she is so well known in Perth.

Rather, she is looked upon as the girl who has cared for thousands of distressed birds — 14,500 of them, if you count the records up.

When Lexie was a small girl she had a great compassion for distressed animals. Not just the usual cats and dogs, but all the bugs and beetles as well. So much so that her parents gave her a room in their home which was dubbed the 'bug hospital'.

To this, she would bring ants and earthworms she found half drowned in flooded gutters.

'I would put them to bed in matchboxes lined with salt,' she said. 'The salt extracted the overdose of moisture they had in their bodies—though heaven knows what else it extracted — and within half an hour they were usually struggling to move round again.'

In her work, Lexie found it was not easy to accept that in the cause of science some birds had to be killed for dissecting.

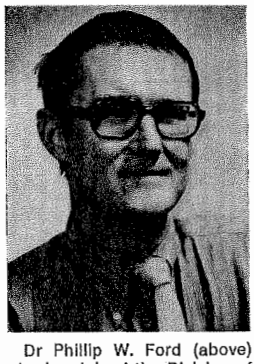
'I knew it had to be done, but I didn't like it. I think I began looking after the birds as some way of making up for those that we had to kill.'

Hospital

Lexie's hospital became known all around Perth and beyond and the whole thing snowballed. She found herself erecting cages all over the backyard to keep the birds which daily were brought to her home.

Cont'd on page 4

Appointment



Dr Phillip W. Ford (above) who has joined the Division of Environmental Mechanics at Canberra as Scientific Assistant to the Chief, Dr J. R. Philip, has come to the Pye Laboratory from Monash University where he was Senior Teaching Fellow in the Department of Chemistry. He completed his first degree at Monash and his doctorate at the Australian National University, studying for the latter while a CSIRO senior postgraduate student.

After the award of his Ph.D. in 1968, Dr Ford spent some years overseas at the Universities of Illinois and Oregon in the USA, and the Ruhr Universtät, West Germany.

Award to astronomer

A young Australian National University scientist, Dr Don Melrose of the Department of Theoretical Physics, has been awarded the 1974 Pawsey Medal by the Australian Academy of Science for his contribution to plasma astrophysics.

The medal commemorates the contribution made to astronomy by the late Dr J. J. Pawsey, a pioneer Australian radio astronomer and a former officer of the Division of Radiophysics.

Don Melrose is a familiar figure around the laboratories of the Division where he spends much of his time, and the staff at Epping have taken a special interest in his award.

In his reply after the presentation, Don said it was partly because he knew Australia was prominent in the field of radio astronomy that he decided to interest himself in associated theoretical problems.

Since his return from overseas in 1969, he has spent a month each year with the Division, apart from making regular visits to it during the academic year.

'Someone will come up with a new observation there,' he said, 'and will ask me if this is theoretically possible,' he said, explaining the relationship he has with CSIRO. 'I check my own ideas against their observations.'

Don has recently been working on solar radiation bursts and is currently writing a book on plasma astrophysics.

Chief back on duty

Dr G. D. Aitchison, Chief of the Division of Applied Geomechanics, has resumed duty after six months during which time he undertook a broad scale feasibility study on research needs in coastal and marine geomechanics.

The study was prompted by an awareness of the growing national need for information of a geo-technical nature to support designs for a large variety of engineering projects in coastal and marine environments.

The geomechanics aspects of shore protection, of off-shore mining and of the development of coastal transportation facilities were included in the work.

While Dr Aitchison was on this assignment, his place was taken by Dr C. M. Gerrard. The Executive has now announced Dr Gerrard's appointment as Assistant Chief of the Division.

At least they caught something . . .

Life was not all hard grind for the scientists stationed at Walpole 300 km south of Perth as they prepared for that 'magnificent failure', the solar eclipse.

The CSIRO party was accommodated at Tinglewood Lodge, and Harry Black, CSIRO Press Officer, and Jack Brophy, Admin. Officer of the WA Laboratories, spent a night there during their tour of observation stations.

A keen angler, Harry asked whether there were any fish in the nearby river but the locals were sceptical about an easterner's ability to catch the wily WA fish — particularly when Harry asked for cheese to bait the two small hand lines he'd borrowed.

With ribald remarks to speed them on their way the two CSIRO types set off for half an hour's fishing in the dark . . . and returned with two 700 g black bream and tales of an even larger one that broke the line.

Harry was duly made an honorary member of the Tinglewood Fishing and Boating Club while the manager was more than usually appreciative of the addition to the menu — he'd been unsuccessfully trying to buy fresh fish for one of the solar scientists who was on a special medical diet.

Ecos

If you haven't seen the first issue of 'Ecos' yet you will soon. It's CSIRO's latest publishing venture — a 32 page quarterly environmental magazine.

'Ecos' aims to tell people in industry, government and the universities about a diverse array of environmental projects.

CSIRO is becoming more involved in co-operative research with other groups and the first issue reflects this interest.

As the Chairman, Dr J. R. Price, says in an introduction: 'Much of the research of the Organization is concerned with understanding the environment and learning how to manage it.'

The new quarterly will make the Organization's research findings available to a wider audience — not everyone has the time, training or inclination to seek research results from the original learned journals where scientists publish them.

The lead article deals with toxic metal pollution of two Tasmanian rivers — the Derwent and the Tamar. It describes research being done by a host of government departments, the University of Tasmania and CSIRO to unravel a complex pollution problem.

Another article deals with a cooperative survey in the Northern Territory to assess the likely effects of uranium mining and other development on the Alligator Rivers region.

'Ecos' will be similar in some ways to 'Rural Research' and this is not surprising since it comes from the same writing group. It will not ask for contributed articles but will be written by science writers who will seek material from the Divisions and then produce the stories.

Both magazines are written in Canberra by a Head Office writing group — led by Brian Woodruff — part of the Agricultural and Biological Sciences Branch.

For some time now, Brian and the two writers working on the new magazine have been huddled together working out a format and selecting topics. Now the second issue is already written and the third planned.

One of the writers is Brian Lee who used to write for 'Rural Research'. An entomologist turned writer, Brian trained at Oxford University and did a stint on tse-tse fly control in Africa before coming to CSIRO.

The other is Robert Lehane, an experienced science journalist, once science correspondent for 'The Australian'. His association with CSIRO goes back some time — in fact he is a former editor of 'Coresearch'.

Both Brian and Robert are already familiar faces in quite a few Divisions. But as Brian Woodruff points out, they can't be expected to know about the progress of every environmental research project in CSIRO.

If your Division has a project that could be written up in 'Ecos' he would appreciate hearing from you.

As well as describing the findings from completed projects, 'Ecos' will publish shorter items about research projects just starting.

THE SMOKECATCHERS

The Fire Research Section of the Division of Chemical Technology in Melbourne has instrumented a light aircraft for the collection and study of smoke produced by bushfires.

Although bushfires have been part of the Australian scene for many thousands of years, little is known about the smoke they produce.

And if the practice of 'prescribed burning' — now a routine method of reducing the fire hazard in some Australian forests — is to be used on an increasing scale, it is important to know how bushfire smoke affects air quality.

In Western Australia especially, low-intensity prescribed fires are now in common use.

Lit from the air, they can be spread over very large areas—up to 20,000 hectares in a single day.

The extensive smoke columns produced during these operations provide an excellent source for the study of typical bushfire smoke.

A light aircraft has been used to collect smoke samples from bush fires and studies have been made of particle sizes and the diffusion properties of the smoke columns as they are blown downwind.

The most undesirable feature of the smoke build-up from a fire is loss of visibility in the atmosphere for, once an extensive smoke column has been established, a thick haze may be spread over wide areas.

This can be a major source of nuisance to light aircraft and it will be increasingly necessary to plan burning programs in conjunction with both Civil Aviation authorities and the Bureau of Meteorology.

Dr Don Weiss, Chief of the Division of Chemical Technology (left) inspects the instrumented plane with Dr Bob Vines (centre) and Mr Nick King.

LONDON LOG

Newcomers to ASLO expect to have to get used to a new environment but one member of the team at least found one aspect of coming to London a bit hard to get used to.

Whether it is from devilment or long custom matters little, but one's more experienced colleagues talk almost wholly in algebraic symbols. Here is a sample:

'I was talking to the CSG about CSG and he reminded me that CAB is contributed to by quite a number of LDCs . . .'

The newcomer in self-defence develops for himself a glossary of these algebraic acronyms and proceeds in turn to bedazzle each newcomer as he arrives.

UPOV is a relatively new one — and just to confuse people still further it runs under another algebraic alias as well. In general translation from the original title which is in French, UPOV stands for the International Union for the Protection of New Plant Varieties.

One of us had the opportunity of being Australia's Observer at a UPOV annual meeting in Geneva and found the whole idea of UPOV very interesting.

The organisation has drawn up a convention to which nations can become signatories and thereby also members of UPOV, provided that they have arranged their domestic legislation in such a way that the names and identities of cultivars can be adequately protected, in a sort of copyright sense, to prevent piracy of these quite commercially valuable breedings and selections.

The scheme has been operating now for several years in Europe and most of the major Western European countries are members. Nationally they consider the procedure to be already very useful indeed.

Its adoption has been followed by a remarkable increase in commercially-developed and governmentally-developed cultivars. The United States, Japan and South Africa are actively working on their legislation to secure membership and Australia is giving thought to the matter also.

Apart from the intrinsic interest of UPOV it was fascinating to have the chance of wandering through the U.N. centre in Geneva, the former League of Nations headquarters, where functions complementary to those dealt with at the U.N. headquarters in New York are handled.—R.D.C.

LETTERS

Sir — Dr Springell has asked for examples of publication of research being discouraged in CSIRO and I have told him of my experience.

But must we rake over cold ashes to prove the obvious? Simple human dignity demands that we be allowed to express our views freely.

Why do most Chiefs choose to assume the authority to grant permission to publish research? Finding the task impossible, why do they delegate it in effect to editorial panels and divisional readers, who could be better occupied aiding and encouraging the authors?

The aim of research is originality. New ideas begin with a minority of one and it is not easy to stand alone against the body of scientific opinion. Disparagement is more common than encouragement from those who have been out-dated by an original idea.

Dissent should be encouraged in CSIRO. If I still wish to publish after considering adverse criticism, should I not do so as a member of CSIRO?

The notion that my publications under a divisional address commit the Division to my point of view implies that there is a consensus of opinion. Good for the army, good for politics, but . . .

So . . . Please, Sir, permission to think!

—R. L. Davidson,
Division of Animal Physiology.

Sir — The letter in your June issue seems to voice concern about the kind of captions which accompany photographs of females in 'Coresearch' and suggests that men would find analogous treatment degrading. It would be unwise to let such an opinion pass without comment.

The real reasons for the absence of such descriptions applied to men are, of course, the substantial differences existing in our society between sexual attitudes of males and females and the way in which our social institutions cater for such differences.

Sexual assessment of females, in photos or otherwise, is almost universal among men and can hardly be regarded as detracting from the freedom and equality of women.

Far from feeling degraded, men, I feel sure, would welcome equal treatment in this area and Jewel Pels would be doing humanity a genuine service by directing a campaign for an appropriate change in female attitudes rather than for deletion of captions which cater for an important male interest.

—Tom Biegler,
Division of
Mineral Chemistry.

ANU appointment

Dr J. B. Langridge of the Division of Plant Industry in Canberra has accepted an honorary Visiting Fellowship in the Research School of Biological Sciences at the Australian National University. Dr Langridge was formerly Professor of Genetics at the School.

For your information

Information circulars

74-38 (not issued)
74-39 Colombo Plan — Indonesia
Short term assignment in animal husbandry
(Applications closed 24 June 1974)
74-40 Telex Installation — Epping, N.S.W.
(Altered telex number — Divisions of Radiophysics and Cloud Physics)
74-41 Overseas Office — Australian Scientific Liaison in Korea
(Mr E. E. Adderley has been designated Counsellor (Scientific) in absentia to the Australian Embassy in Seoul, Republic of Korea)
74-42 1973/1974 Income Tax Returns
(Requesting prompt submission of returns for early processing)
74-43 National Measurement Laboratory
(Consolidation of Divisions of Applied Physics and Physics under Director, Mr F. J. Lehany)
74-45 Head Office Arrangements
(Mr J. P. Shelton resumes duty 1/7/74)

Policy circulars

74-19 Salary and Wage Adjustments and Amendments to Terms and Conditions of Employment — National Wage Case 1974
(Adjustments to salaries, wages and associated allowances)
74-20 and 74-21 — (listed previously)
74-22 Maternity and Paternity Leave
(Supersedes all previous circulars concerning leave in relation to childbirth. Leave benefits apply to eligible officers and employees retrospectively from 1 January 1973 — ask your leave clerk about details)
74-23 Camping Allowances (New rates of camping allowances)
Travelling, meal, and living away from home allowances
74-24 and 74-25 (not issued)
74-27 Attendance at conferences — special rates of pay
74-28 Metric Conversion — Road Travel
(Conversion date 1.7.74; reminder that official vehicles are not exempt from any regulations or by-laws, including those relating to parking, and the driver of an official vehicle is responsible for any penalties or fines arising from a breach of regulations or by-laws).

Award

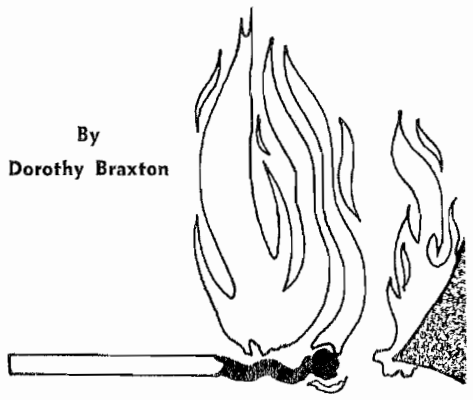
Mr Michael Tracey, Chief of the Division of Food Research, has been given the Award of Merit for 1974 by the Australian Institute of Food Science and Technology.

The award is conferred on a member of AIFST for meritorious contributions to the advancement of food science and technology in Australia.

In presenting the award at the Sydney convention of the Institute, the Federal President, Mr P. E. Seale, referred to Mr Tracey as 'an eminent leader of a widely respected research team and a significant contributor in the field of biochemistry.'

Clothes burn

The day Mary Ann Jones turned five was an important one in her small life. It meant kisses from her parents, presents from those who loved her and a birthday party at night.



By
Dorothy Braxton

When all the excitement was over and her birthday cards were standing up along the mantelpiece, Mary Ann went to bed, the happiest girl in Melbourne.

But it was all too much excitement for her. Before she could sleep she wanted one last look at the cards to see if it had all been real.

When the house was quiet and everyone had gone to bed, she pulled on her dressing gown and crept out to the lounge.

But Mary Ann forgot one thing. Her dressing gown. When she stretched up to the shelf to take a card in her hand, the corner of it fell into the heater, left burning to keep the house warm.

Seconds later Mary Ann was a living fireball.

The traumatic experiences for her and her family over the next few hours don't have to be recorded here. Suffice to say she was rushed to the Burns Unit of the Royal Children's Hospital where for several days her life hung in the balance.

'Then for a time,' said Mr A. Murray Clarke, the surgeon in charge of the Unit, 'we thought she was going to make it. Even so, I was appalled at what was ahead of her.

'We could do the skin grafts she needed but donor sites were limited and contractions would occur so we knew she would have to face the operating theatre many times as she grew into her teens.

'We'll never know what happened. One day Mary Ann started slipping back. She lost the will to go on with the battle and died.

Mary Ann Jones will always be in her parent's hearts but long remembered by men like Mr Murray Clarke and CSIRO textile scientist, Dr Tom Pressley, who worked on the case as part of a research program on flammability of clothing.

Statistic

But of necessity for the Commonwealth Statistician's Office she has become a statistic. One more burnt child. One more accident case which need not have happened.

The research into the flammability of clothing and fabrics which has been done by Tom Pressley at the Division of Protein Chemistry, is now internationally recognised.

Not only has Australia accepted his recommendations but the standards laid down here as a result of the work he has done in association with the Burns Unit have created a great deal of interest overseas.

With the success that has come from the research program and with Government support to pass legislation backing the recommendations, it might be thought that Tom and Mr Murray Clarke would be feeling optimistic about the future.

Instead, neither of them is convinced that their achievements will make a significant contribution towards a drop in statistics. Not, at least, in the immediate future.

Even though they have the scientific facts on one hand and legislative support on the other, they are sceptical about the other factor involved . . . people.

'We can talk to mothers' clubs, distribute literature and have the backing of safety and consumer organisations,' Tom said, 'but we still feel we're talking to the converted.

'How many others read or listen to what's being said about burns prevention?'

'It's not that people don't care. Just that they don't know. How do we reach such parents? And retailers and manufacturers?

'I believe our best hope lies in the schools with teachers and children. If we can get the message across to the next generation that this is tremendously important to them we might achieve something.'

Shopping

To test Tom's views I walked into a Canberra babywear shop and asked what was available in baby nightgowns. I was told they had not stocked those made in the woollen and cotton mixture known as vyella or clydella for two or three years because of the cost of them being higher than others.

In their place I was shown two or three kinds which had no flammability labels on them nor was the fabric, a synthetic, identified. I admitted this may have been because they were manufactured overseas or made here before they were required to carry such markings.

I asked about nightwear made by Bonds, a firm which Tom told me had acted very responsibly in relation to its children's products and their safety factors.

and so

The assistant showed me a couple of their garments but said she doubted if they'd bother stocking them unless the demand improved. 'Most people won't buy the more expensive brands,' she said. 'And no one really takes much notice of labels. They tear them off or the print washes out.'

And then there was the woman who tried to buy flannelette in a Canberra store to make nightgowns for her grandchild. She had always used it for her own children. When she was told it was no longer being stocked because of its potential danger she said she would go where she could buy it. Which is what she did.

It seemed that Tom's remarks about public attitudes might be right.

'Some manufacturers and retailers are right behind us,' Tom said. 'All reputable manufacturers have withdrawn cotton chenille, for instance, from their children's lines and with one exception, so have reputable retailers. This would be the worst of all the fabrics.

'The large firm which still sells goods made from it takes the view that people should be free to buy what they want. If it is dangerous then the Government should ban it if people still insist on buying it.'

Idealistic

'Woolworths is one major supplier of children's clothing which is idealistic about the program. They believe they have a duty to protect their customers against ignorance and were the first to withdraw highly flammable clothing.

'Their rivals have gone ahead with sales but they've stuck to their principles. Perhaps it's helped that their quality assurance manager, David Jerram, is a former member of CSIRO's Division of Textile Physics.'

do kids

Tom and Mr Murray Clarke point out that one of the problems in Australia is that this is a hot country. The coolest and most comfortable fabric to wear is cotton, one of the worst flammability offenders.

'It's not going to be easy to talk people out of wearing it,' Tom said, 'so the best thing we can do is to advise them to follow the recommended styles. Copies of a booklet issued on this are available free of charge from State Departments of Labour and Industry.

'When I'm talking to people I can't emphasise strongly enough that it's a mistake to think that the highest risk area lies in girls' nightwear.

'That's a fallacy. The greatest danger lies in boys' day wear.

'Care also needs to be taken with undergarments. If nylon is worn under a flammable frock or nightgown which catches fire it can be dangerous. Synthetics shrink from flame and in doing so they melt or press against the skin, causing severe burning.'

While both Tom and Mr Murray Clarke are deeply concerned with the problem of 'burnt children' both feel equally strongly that they should be seen in context with the whole accident picture.

Wider aspects

'At this stage we have done everything we personally can do to expose the dangers which exist with clothing,' Tom said, 'but Australia should be looking at the wider aspects of prevention of all kinds of child accidents.'

Mr Murray Clarke has also propounded this belief and has put up submissions to this effect.

I walked with him through the corridors at the Burns Unit and he told me some of the traumatic stories about the young patients I could see behind the glassed-off wards.

They were bad enough, but as he said: 'Health programs have reduced infections and nutritional deaths but the death rate due to accidents, including children like these in here, has increased. It's the main cause of children's deaths in Victoria and in the rest of the western world. Modern technology has resulted in more environmental deaths and accidents.'

Mr Murray Clarke pointed out that mortality figures were easy to obtain but these alone might lead to erroneous impressions.

'Before we can even begin to comprehend the immense task of accident prevention in childhood, an account must be taken of the serious non-fatal figures as well. Only by doing this can we get an indication of the frequency and of social and economic consequences of accidents,' he said.

Research

Both men want to look at children's accidents as they did with their burns studies.

'There,' Tom said, 'we not only had data on the child and the cause of the accident — whether it was a case of matches, open fire or heater — but we also examined the clothing the child was wearing to gain the complete picture.

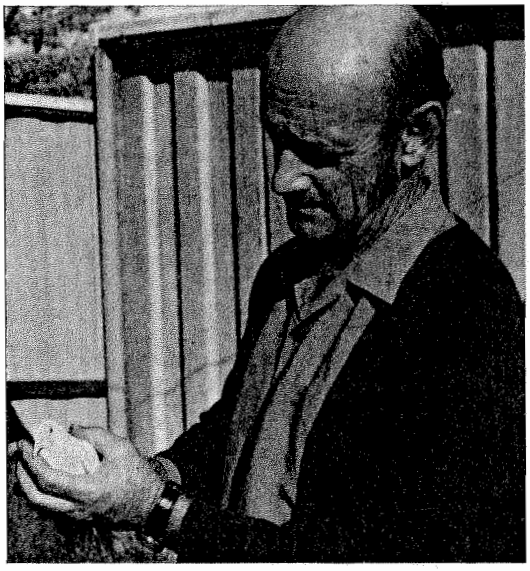
'There is therefore an urgent need for data collection centres for children's accidents to be set up in each State and to be correlated through a central office. That way guide lines and principles for long term prevention of accidents can be established and priorities in a program of accident prevention assigned.

'An accurate estimate of the cost of accidents to the community in hospital care could then be obtained giving a convincing demonstration that prevention will pay handsomely.'

Tom Pressley and Mr Murray Clarke are two men who set out to work on a research program. It took them a lot of hours to get the answers to the questions.

Having found them, though, neither has been content to let it go at that. Each is deeply committed to seeing the practical application of the work and its extension to a wider, more effective result.

Frills out — safety in



His work is his hobby

Two years ago Harold Davis (above) saw an advertisement in a Perth newspaper for a position at the Division of Wildlife Research Helena Valley Laboratory.

Harold felt that 32 years as a storeman was long enough so he resigned the job he had and took up a new career. Since then he has looked after the hundreds of birds which are kept at the laboratory for research purposes.

It's a seven-day-a-week job because someone has to feed and water the birds, keep a check on their cages and the bigger aviaries and make sure that nothing happens to any of them.

The eagles are possibly Harold's favourites. He feels they have definite personalities and when five of them were sent off to the zoo he felt the laboratory lost friends rather than 'just mere birds'. However, one of them, Bill, which has a damaged wing, was rejected by the zoo and Harold makes sure he gets a bit of special attention.

He also has taken a special interest in the emus and gives a hand with the measuring and weighing of the birds. Some of the emu chicks have to be hand reared and there are times when Harold has taken a few home to keep them warm in the oven.

Seagulls, doves, swans, cockatoos, galahs and honeyeaters are among some of the birds he looks after each day. And as if that isn't enough when he crosses the road to home at night he doesn't really get a break from them . . . Harold's hobby is birds and he has his own aviaries with budgerigars, canaries, finches, rosellas and corellas.

Forestry Newsletter to be published

A new annual publication to be called 'CSIRO Forestry Research Newsletter' will make its debut before the end of the year.

Basically, it will deal with a wide variety of forest interests, such as the land on which the forests grow, the wildlife communities, forest products, conservation, the multiple use of forests (i.e. timber and bauxite mining as occurs in Western Australia), the quality and quantity of water yield and even recreational use of forests.

Maurice Mulcahy

Circulation will be both within CSIRO and beyond and copies will be available to both State and Australian Government departments and agencies, to universities and industry and it will also be sent to interested people overseas.

The editorial offices will be located in the Division of Land Resources Management at Perth where a number of programs involving different aspects of forest research have been initiated.

The editor will be Maurice Mulcahy who for a time was acting Chief of the Division. Originally a forester, Maurice was formerly the officer-in-charge of the soils laboratory at Perth and is President of the Australian Society of Soil Science.

He is currently developing the Division's forest land research program and is at present overseas looking at forestry in the United States, Canada and the U.K. He was also scheduled to attend the International Soil Science Congress in Moscow.

Engineers to meet at Monash

A conference on production technology to be held at Monash University from 19-21 August seems certain to attract a lot of attention from engineers all over the country.

Sponsored by the Institution of Engineers Australia, the Institution of Production Engineers, the Australian Institute of Metals, the International Institution for Production Engineering Research (CIRP) and the Society of Manufacturing Engineers, the conference is also being supported by CSIRO, the Department of Supply, BHP, the Metal Trades Industries Association and the Monash University Armstrong Fund.

Keynote speakers have been chosen for their expertise in different areas of production technology and include such people as Professor J. Peklenik who is Professor of Controls and Manufacturing Systems at the University of Ljubljana, Yugoslavia; Mr F. W. Boulger, senior technical adviser, Batelle Columbus Laboratories USA; Dr M. E. Merchant, research director of Cincinnati Milicron, also from the United States; and Professor G. F. Micheletti from the Institute of Technology, Turin, Italy.

Other speakers will come from Japan, Norway and Austria. It is expected that 300 delegates will attend the sessions.

Before the main conference a small pre-conference meeting on 'The Future of Production Engineering' is to be organised by the Division of Tribophysics.

This will bring together some of the overseas guest speakers who will be here for the major event, together with leaders of Australian industry and government.

'Bird girl'

Cont'd from page 1

Her mother was pressed into helping to look after them.

'The vista from our backdoor was a maze of wire . . . I built the cages myself, but I'm not much of a carpenter.'

Lexie found the birds needed infra red light, heating, electricity, water and bedding. They also needed drugs and food.

Her work with them would begin as soon as she returned home each night and she forgot what it was like to have a hot meal when it was ready.

The telephone would ring with people asking what to do with a bird they had found and she would often have to go and rescue it, especially when some people thought she was there to give a paid service and threatened to throw the bird on to a neighbour's front lawn and let it fend for itself if she didn't go and get it.

Sometimes she had to get up every two hours through the night to attend to 'patients' and always by 5.30 am she was up to do the morning rounds.

At the end of last year, it proved all too much for her. She was not only exhausting her health, but her bank balance — two-thirds of it has gone on the hospital each year.

Lexie was told for her own sake she had to shut up shop, but she did so most reluctantly.

But somehow, it's all quietly starting again. She promises it will never get out of hand again, but the trouble is of course, as people said, 'Lexie's a born nurse', and while she never regrets the time she spent nursing people, it's not so easy to turn your back on a distressed bird.

Award

Dr D. F. Waterhouse, Chief of the Division of Entomology, has been elected a Corresponding Member of the Brazilian Academy of Science.

The Division has a small team at Curitiba in Brazil engaged on a search for organisms to extend the biological control of lantana in Australia.

It is expected the award will cement the scientific relations with Brazilian biologists and facilitate the working of the group.

Honour

Dr A. J. Dyer, Assistant Chief of the Division of Atmospheric Physics, has been appointed Vice-President of the Royal Meteorological Society. Dr Dyer is also Chairman of the Australian branch of the society.

Academy sponsors conference . . .

Nearly 1000 people will be attending the eighth international congress on electron microscopy to be held in Canberra from 25-31 August.

The congress will be the largest and most complex ever sponsored by the Australian Academy of Science.

Among those attending will be early pioneers of the electron microscope, Ernst Ruska of Germany and Dennis Gabor of the United States.

Most sessions of the congress will be held on the campus of the Australian National University, where about 400 papers will be delivered during the week, at times at 10 concurrent venues.

The opening ceremony will be held at the Canberra Theatre, where the President of the Australian Academy of Science, Professor G. M. Badger, will welcome the delegates.

At present, 150 conventional electron microscopes and 28 scanning instruments are installed in Australian laboratories and over 500 people use them for a substantial part of their professional work. CSIRO owns 22 of the conventional instruments and five of the scanning ones, and 60 members of CSIRO use them.

Electron microscopes are used in fields ranging from research on the structure of cell nucleii to the study of the ultrafine structure of metal and alloys. Using electrons instead of light, they can magnify objects up to about a million times.

The design and use of electron microscopes is still advancing rapidly. When Professor Dennis Gabor first dreamed up holography (three dimensional photography) he saw it as a potential new route to ultra-high-resolution electron microscopy.

Earlier this year, two researchers announced the achievement of this very aim. For the first time it is now possible to visualise the clouds of electrons which surround an atom. This 'holographic electron microscope' gives a magnification of 500 million times.

At the congress, 16 subjects of current interest have been selected for major discussion. They include advances in electron microscope technology, mineral applications, investigation of biological membranes and the chromosomes of higher animals and plants, and the study of certain aspects of immunology.

Added features of the congress will be an exhibition of electron microscope equipment and a display of electron micrographs.

. . . so does Royal Society

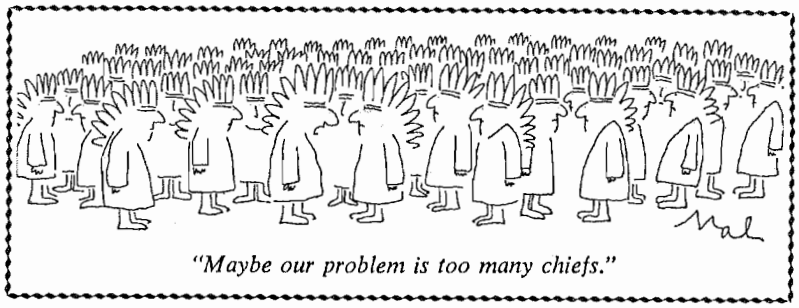
Dr Ken Lee, soil zoologist at the Division of Soils in Adelaide, is joint organiser of a discussion meeting on the 1971 Royal Society expedition to the New Hebrides.

This will be held in London during the week beginning 7 October and will be arranged in two parts.

The first, the informal section will be the occasion when 20 papers will be presented on various aspects of New Hebrides botany, zoology, forestry, soils and geology. Three CSIRO staff members will be among the speakers — Dr Lee, A. N. Gillison (Land Use Research) and J. C. Buckerfield (Soils).

A formal meeting of the Royal Society will be held on 11 October when a series of summarising papers will be presented covering the work and conclusion of the expedition.

Dr Lee extends an invitation to any other CSIRO staff who may be in London at the time to attend the meetings and asks them to get in touch with him as soon as possible.



"Maybe our problem is too many chiefs."

'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.

Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478 or Wendy Parsons, 48 4227.

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coresearch 184

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September 1974

CSIRO staff head committees to work with Russian scientists

With the stage set for the formal signing of the USSR-Australia Agreement on Scientific and Technical Co-operation, CSIRO is already playing a key role in arrangements which will lead to collaboration between the scientists of both countries.

At the invitation of the State Committee of the USSR Council of Ministers for Science and Technology, the Chairman, Dr J. R. Price, recently spent 10 days in the Soviet Union. While he was there he had discussions with the Russians which considerably advanced the plans the scientists of both nations have for co-operative ventures under the new agreement.

This provides for the

- exchange of visits by scientists, technical specialists and delegates for research and familiarisation
- bilateral conferences and symposia
- exchange of scientific and technical information and documentation
- pursuit of joint research activities.

The agreement is designed to facilitate co-operation between government bodies. Dr Price said universities would also be involved and would play an important part.

When a Soviet scientific delegation visited Australia to initial the agreement in February, areas of common interest were identified and from these five areas of high priority were selected. These were:

- wool textile technology
- radio astronomy
- entomology, with particular emphasis on biological control of pests
- plant science, including plant breeding, fertilisers and plant collecting
- earth sciences, with particular emphasis on geophysics, geochemistry and meteorology.

It was decided that each nation should appoint a committee for each of the five areas and that members from each country should meet to develop clear-cut proposals for collaboration on specific programs or projects.

The names of the chairmen of the Australian committees have been announced by Mr Whitlam. All members of CSIRO, they are:

- Wool textile technology—Dr M. (Pip) Lipson, Chief, Division of Textile Industry
- Radio astronomy — Dr Paul Wild, Chief, Division of Radiophysics
- Entomology — Dr Doug Waterhouse, Chief, Division of Entomology
- Plant science — Dr Lloyd Evans, Chief, Division of Plant Industry
- Earth sciences — Mr Ivan Newnham, Director, Minerals Research Laboratories.

Dr Price said the Russians had also appointed their chairmen and 'they want to get on with the job. The Russians' aim, with which I fully agree, is that all committees will meet before the end of this year — wool textile technology and radio astronomy in Australia and the others in the USSR.'

In addition to discussions with representatives of the State Committee of the Council of Ministers for Science and Technology, Dr Price visited the headquarters of the USSR Academy of Sciences and several research centres in Moscow and Leningrad.

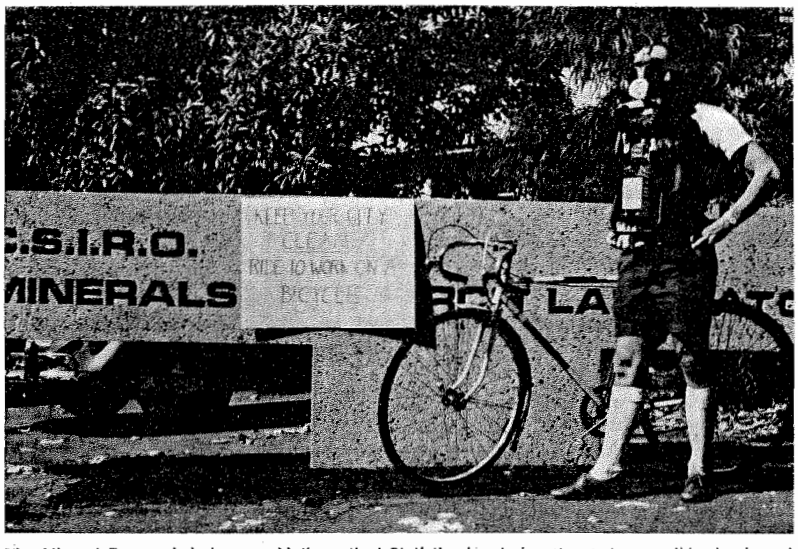
Dr J. R. Price

He also visited Akademgorodok, a major scientific community established near the city of Novosibirsk in resource-rich Siberia.

While in the Soviet Union, Dr Price gave three talks — on research for the wool industry, integrated pest management (primarily biological control) and trends in Australian chemical research. These addresses were well received, the one on pest control being perhaps of widest interest.

The talk on wool research was given at the Central Wool Research Institute, one of the bodies which will be involved in collaboration under the scientific-technical agreement. Dr Price said the audience was particularly interested in CSIRO's methods on objective measurement of quality.

On the subject of wool research in general, he said the audience was more interested in processing than production.



The Mineral Research Laboratories are currently investigating pollution problems. The results have been enough to make one of the staff take his own protective measures against Sydney's ever-worsening smog. Our colleague, seen above in his new 'uniform' for work, also believes that cycling to work—or even running there — helps to keep his city clean. And talking of bicycles — we've just learned that the 11 members of the Division of Mathematical Statistics located on the Black Mountain site at Canberra have bought themselves one to get around the various Divisions they service and across to the neighbouring Australian National University.

The group does have a minivan but they felt it was wasteful to be using that all the time when distances were comparatively small between buildings. They're far enough away however, for it to be wasteful in time to keep walking backwards and forwards so a bike was the obvious answer. And guess who had the last laugh when the petrol shortage hit Canberra last month?

Oh — yes. It is a male's bike. The staff count of the group revealed three women and eight men. One woman said she wouldn't be riding the bike anyway so, as a spokesman for them said, 'The males won out by sheer weight of numbers'.

Textile Chief became ready-made interpreter

When you're in a foreign country and can't speak the language it helps a lot if you have someone with you who can.

For this reason alone, the Chairman, Dr J. R. Price, and Mrs Price, who accompanied her husband on his visit to Russia, were pleased to have with them on their travels the Russian-speaking Chief of the Division of Textile Physics, Mr John Downes.

Mr Downes, who was in Europe for technical committee meetings of the International Wool Secretariat, joined the Prices in London and accompanied them during both the official and social side of their 10-day stay in Moscow, Leningrad and Novosibirsk.

In addition to his technical and professional assistance, Mr Downes' knowledge of Russian proved an invaluable aid in making introductions, keeping track of names, resolving questions of interpretation and in helping out when the interpreter was absent. He was, Dr Price said, 'a tower of strength'.

'Russian is a sideline with me,' Mr Downes said later. 'I started studying it in the late 1950s because I thought we might be missing out on a lot of technological and scientific information. I only have a smattering of it, but I can conduct a conversation at a slow speed.'

He learnt the language by attending classes, conversing with Russian-speaking people and any other means available.

Mr Downes has visited the Soviet Union on two previous occasions in the course of his work.

While Dr Price and Mr Downes were on official business, Mrs Price went on guided tours. They all saw the Moscow circus, two ballets and various sights around Moscow and Leningrad.

'Millionaire' status

The Laboratories Credit Union in Sydney has reached 'millionaire' status — funds on deposit at 20 June totalled $1,129,000.

The society will hold its 20th annual meeting on Wednesday, 25 September, at the Mineral Research Laboratories, North Ryde, Sydney, at 5.15 pm. The usual buffet dinner and refreshments will follow the formal meeting and all members and interested non-members are invited to attend.

New interest rates have been set by the Directors which apply from the first pay period in July 1974. Interest of 9.5 per cent half-yearly is now paid on all deposits and a loan interest rate of 11 per cent calculated on quarterly rests is charged to borrowers.

Staff wishing to deposit money at the attractive rate of 9.5 per cent can do so by direct payment to the Credit Union or by regular deduction from salary. Forms authorising salary deduction are available from divisional officers.

Death to the potato moth – long live 'crispies'

Ever thought what it would be like to spend five years of your life breeding the best part of a million potato moth larvae?

For Brian Springett, John Mathiessen and Lynne Hayles it's all part of a research program which they hope will lead to the control of Australia's potato moth.

For years this tiny moth has been 'carrying on regardless' in the potato crops, bothered only by occasional doses of DDT which it is gradually learning to shrug off.

In the early hours of the day, it becomes pretty active, cavorting around, breeding, eating the leaves of the potatoes, tunnelling into the tubers and generally flitting about in a destructive sort of way.

The larvae on the other hand, never stop. They just chomp merrily on, day and night.

All of these rather careless habits have been costing the Australian potato grower a lot of money.

They've upset crop production and consequently affected the market supply and hit the consumer through his pocket, his gastronomical appreciation of the tuber and to the horror even of children affected the Australian potato crisp industry.

Accident

The scientists have found an effective way to kill the moths by using a virus pesticide, but the strange part of the story is that they stumbled on to the idea by one of those curious scientific 'accidents' which occur from time to time in CSIRO and which have led to some quite dramatic discoveries.

As Brian explained: 'In its Canberra laboratories, the Division of Entomology was looking at ways of controlling the potato moth and for this purpose had produced a lot of larvae.

'It was felt it was becoming resistant to the usual DDT-type sprays and we'd been considering the use of a parasite, in this case, a wasp.

'At one stage a virus of some kind swept through the larvae causing massive mortality.

'Most people threw up their hands in horror claiming all their work had been ruined overnight. But one of the team, Eric Reed, became interested in a virus which could have such devastating effects.'

Field Trials

'If a virus, he argued, could kill the larvae under laboratory conditions, it might be equally effective in natural ones.

'The proposition was worth investigating. We needed a particular type of location for field trials where potatoes were grown under controlled conditions and found the ideal situation existed near Perth where growers are licensed.

'The Growers' Association there was co-operative, so were the Potato Marketing Board and the Department of Agriculture.'

The original virus was prepared in Canberra from about a quarter of a million diseased larvae and transported to Perth by Eric Reed for Brian and his colleagues to carry out the field trials.

The spray was simple enough to make. The dead larvae were put into a tank on the back of a tractor, a few drops of a commercial detergent were added and hey presto, a spray was ready for use.

Mothproof

Its effect, Brian said, was so significant that they found once an area had been sprayed it remained more or less mothproof for a couple of years.

The virus is a granulosis virus, a disease which has been known to exist in Australia for a long time and which, so far as is known, causes harm to nothing except the potato moth.

But this is the fact which has to be proved to the satisfaction of the authorities. If it gains that approval it will become the first home-grown insect virus to be registered for use in Australia.

The funding of the toxicity test to prove this is expensive — about $100,000 — but the scientists are hoping that WHO or FAO may take it up.

The work may be carried out in England and it is for this purpose that the Perth team now hopes to be able to produce about half a million more virus-infected larvae.

If the virus passes the test with flying colours and is registered, it would probably be developed by a large chemical company for commercial use.

A quotable quote from 'Last Tango in Paris' quoted from 'Search': 'People do not like finishing anything because then they only have to start something new . . .'

Only the dedicated could stand it — Brian Springett (left) and John Mathiessen in the Perth laboratory where they are breeding thousands upon thousands of virus-infected potato moth larvae.

Math Stats building named

Messages from staff all over the country, from Perth to Townsville, and from former staff and associates as far afield as England, Scotland and Denmark were received when the Division of Mathematical Statistics held a ceremony in Adelaide to formally name their headquarters the E. A. Cornish Building.

The 40 guests included Mrs Cornish, the widow of Dr Cornish, the former Chief of the Division, who died in January 1973, other members of the Cornish family, friends, colleagues and former members of the Division including Professor Evan Williams and Professor Alan James.

The name was unveiled by Mr V. D. Burgmann on behalf of the Executive who said the decision to call the Division headquarters the Cornish Building was an 'admirable way of commemorating the contributions Dr Cornish made in his field and to CSIRO.

'This Division, its staff, building, traditions and reputation are very much the result of Alf Cornish's pursuit of objectivity in learning,' he said.

During the ceremony, an address was given by Professor Williams.

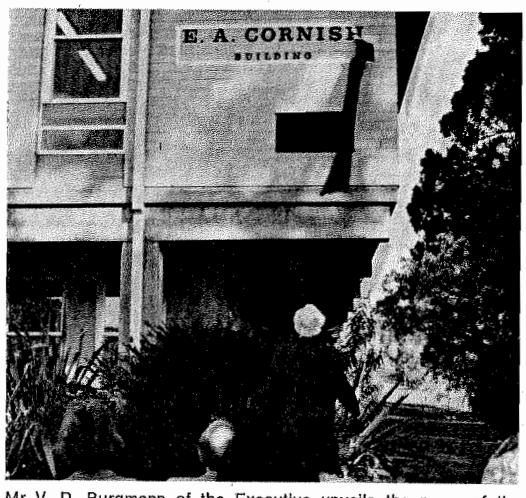
'In evaluating the scientific contribution of a man at the head of a growing organization of research workers, which Alf Cornish was,' he said, 'one needs to look not only at his own personal contribution but also his influence on the organization and those who worked with him.'

'In gathering together a group of more than 50 research workers that comprises many of Australia's leading statisticians, some with world reputations; in organising them to provide the kind of statistical service that's needed both in CSIRO and outside, and so creating one of the great statistical consulting groups in the world; as well as encouraging them to embark on original research, Alf Cornish well deserves the title of "Father of Statistics in Australia".

Professor Williams spoke of Dr Cornish's efforts not only in fostering scientific research in his own Division but of his contribution in the field of computers, and not just to their use as a research tool, but also research on them.

'It was due to his vision and tenacity that CSIRO established its Division of Computing Research in 1963,' he added.

'It is fitting that his name should be linked with this place which was the scene of so much of his endeavour and the focus of what he established through the Division in this country.'



Mr V. D. Burgmann of the Executive unveils the name of the E. A. Cornish Building at the Division of Mathematical Statistics in Adelaide.

Staff changes in CCU

The Central Communication Unit has a new senior media liaison officer. He's Bill Kelly who until early this month was the Assistant Director of Public Relations of the Australian Department of Transport in Canberra.

'Kel' will be heading the media liaison section of the Unit, taking the place of Harry Black who has been appointed to the new position of Adviser, Community Relations.

'Kel' started his career in journalism with the Fairfax group and was make-up subeditor on the Sydney 'Sun' before joining the paper's team in the Federal Parliamentary press gallery in Canberra in 1964.

Bill Kelly

Three years later he left daily journalism to become press officer for the NCDC (National Capital Development Commission) and then in 1970 he was appointed to his position at the Department of Transport.

'Kel' lists his off-duty interests as boating, fishing and photography — in that order of success.

For the last two or three years he's been chasing a large Murray cod known to be in Lake Burrinjuck. The fish, he says, has a price tag on it that's half the cost of the cabin cruiser he keeps at the lake for its pursuit.

Meanwhile he consoles himself with the thought that fish like this cod only grow, they don't inflate.

Harry, in his new role, will be advising on internal and external communication aspects of the Organization's decisions, he'll be maintaining liaison with Divisions and Head Office and helping Divisions in their public communication activities.

He'll also be involved in developing strategies and policies for CSIRO's public communication activities.

Another new member who's been welcomed to the media section of the Unit is Jane Ford whose by-line has appeared regularly in the 'Sydney Morning Herald'.

Jane graduated from Reading University, England, with a B.Sc. in Agricultural Science seven years ago and then joined a national farming magazine.

She then worked on a number of English newspapers as a reporter until emigrating to Australia three years ago.

She joined the 'Sydney Morning Herald' and after working in the Supreme Courts and the Federal Parliamentary press gallery was appointed the paper's science writer.

Of twins and things

Bernie Bindon of the Division of Animal Genetics is overseas examining and assessing, among other things, French research on the genetics and physiology of cattle twinning.

Bernie's work on twinning in Sydney brought him into the headlines some months ago when he received many offers of help from farmers whose cows had produced repeated multiple births.

It's interesting to note that his itinerary includes a visit to the International Planned Parenthood Federation while he's in the UK.

LETTERS

Name of the game

The present name CSIRO refers to scientific AND industrial research, the inference being that its industrial research is not scientific. All research should be scientific, therefore the word scientific is superfluous.

There is no need to specify industrial research—the Organization should deal with all research required by Australians of their national research organization. I understand that there are some who wish the Organization to deal also with matters such as human relationships.

As pointed out by E. R. Ballantyne ('Coresearch' 182) the word 'Commonwealth' in the title confuses people outside Australia. I agree that it should be replaced by 'Australian'. That leaves—

Australian Research
Organization
A R O
'Arrow'

What is its target?

D. R. Eddy,
Division of Soils,
Adelaide.

If the name of CSIRO ('Coresearch' 182) is altered I suggest we change it to:

(1) AS&TRO or ASTRO (Australian Scientific and Technological Research Organization) or even AUSTRO. I think that 'Technological' may cover Industrial and other topics and fields in which CSIRO is involved (besides science).
(2) Another suggestion could be AGRO in a generalised form for: Australian Government Research Organization.

D. D. Axarlis,
Division of Soils,
Adelaide.

It is true we are living in a world that is changing at a rapid rate.

It is also true that with some of these changes comes erosion of one's way of life and to many individuals the changes are no progress at all.

It is hard not to associate these changes with one political party as the trend of a whole group of their innovations is so easy to recognise.

The letter to the editor in the July issue regarding a change of name of our Organization is typical. Attempts to force a pleasant ballad as a new national anthem is another of these innovations designed to split the nation. In my opinion schools run by pupils have little chance of success.

In passing, who on your editorial staff actually made the decision to use the term Ms to identify women?

In this world of strife and
struggle
Let two things stand alone
Kindness in another's troubles
And CSIRO.

Ed Dunstone,
Food Research,
Highett.

The decision to use the term Ms was made by a previous editor of 'Coresearch', who has since left the Organization. While there has been some opposition — mainly from men — to its use, its introduction to our columns stimulated more letters to the editor than has any other topic.—Ed.

It's a woman's world

In 'Coresearch' 182, you mentioned the award of the Farrer Medal to Dr Helen Newton Turner, 'one of Australia's leading women scientists'.

Why 'women scientists' and not simply 'scientists'? In the first place, Miss Turner's sex in this context is quite clear and, in the second, her work needs no paternalistic pat on the head.

Or, is there some essential difference in the work performed by male scientists and female scientists that requires the distinction to be made — even in 'Coresearch'? In that case, you should be consistent and refer to the award of a medal to Dr John X, 'one of Australia's leading male scientists'.

J. F. Michaelides,
Mineral Chemistry,
North Ryde.

With reference to your story in 'Coresearch' 182 — 'She's Miss Woden Plaza', — I protest! As a liberated male, my reaction to the front-page article of the above title was one of disgust. Not, of course, at the pleasant photograph of the young lady concerned, but at the well-nigh insulting innuendos contained in the write-up. Must this sort of thing continue?

Men of the world, wake up! You yourselves have much to gain from the abolition of this sort of claptrap.

C. H. Bagot,
Mineral Chemistry,
Port Melbourne.

Go metric

I wish to comment on some statements in the article 'Road signs go metric on 1 July' ('Coresearch' 182) which I believe to be misleading.

The most dangerous statement is: 'the prima facie open road limit (is) 100 km/h not 60 mph'. The writer should be aware that a 'prima facie' limit of 80 km/h, not 100 km/h, applies in N.S.W. However, the general posted limit outside built-up areas will be 100 km/h. (There is, of course, a clear distinction between a posted limit and a "prima facie' limit.)

Also, in NSW the maximum posted limit will be 110 km/h, replacing 65 and 70 mph limits. The only circumstances under which it would be legal to travel at more than this would be in unrestricted zones (i.e. zones with a 'prima facie' limit of 80 km/h).

I suggest therefore, that the statement 'familiarity with the 120 km/h (75 mph) position' is dangerous, and that familiarity with the 110 km/h position is preferable.

I would also have thought that in view of the Australia-wide circulation of 'Coresearch' some mention may have been made of varying state speed regulations, or at least an admonition to consult the appropriate metric conversion leaflets available in each State.

These may seem carping criticims, but I do think that the information supplied by a safety officer and given such publicity, particularly in such a vital matter as road safety, should be scrupulously accurate.

E. D. Dale,
Studentship Holder,
University of Sydney.

The July safety notes about metric speed limits contained an error. A prima facie open road speed limit of 100 km/h was mentioned.

New South Wales is the only State with a prima facie limit and it is 80 km/h.

The other States have absolute limits. These are:

Victoria and Queensland — 100 km/h.

South Australia, Western Australia and Tasmania — 110 km/h.

All roads in the ACT are speed zoned. The Northern Territory has no absolute limit outside built-up areas. — Gil Barnes, Safety Officer.

Around the Divisions

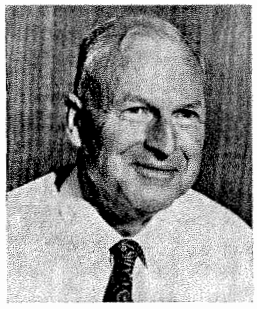
Radiophysics

Mr. John Bolton of the Division of Radiophysics has left on a two-month visit to optical and radio astronomy centres in the United States, Canada, United Kingdom and Europe. John will also attend a meeting of the Executive of the International Astronomical Union, of which he is a Vice-President, in Grenoble, France, and a meeting of European astronomers in Trieste.

Tropical Agronomy

Dr E. M. Hutton, Chief of the Division of Tropical Agronomy in Brisbane (below), has been made an honorary member of the Japanese Society of Grassland Science.

Dr Hutton was in Japan recently en route to the International Grassland Congress in Russia. During his stay he was visited by the President of the Japanese Society, Dr K. Mitsui, and the past President, Dr T. Yamada, who handed over to him an impressive scroll in Japanese and expressed their



pleasure at the honour being conferred on the Australian.

The scroll reads: 'The President of the Japanese Society of Grassland Science has the honor to announce that the annual general meeting of the Society held in Tokyo, 1974, unanimously consented to nominate Dr Edward Mark Hutton, Chief, Division of Tropical Agronomy, CSIRO, Australia, as an Honorary Member of the Society in recognition of his great contribution to the progress of grassland science and technology in Japan.'

Irrigation Research

Visits to the United States and India are on the itinerary of Mr E. R. Hoare, Chief of the Division of Irrigation Research at Griffith, who is overseas for three months. Mr Hoare planned to attend a number of conferences, including the International Trickle Irrigation Conference — the trickle irrigation system was originally invented by Mr. Hoare and Mr Ted Trickett of the same Division in 1950.

His program also includes travel in the southern areas of Portugal where large irrigation schemes are on the drawing board and in Spain where he will look at problems associated with the control of salinity and sea water intrusion.

Dr P. C. Kerridge of the Division of Trophical Agronomy has been seconded to the Malaysian Agricultural Research and Development Institute (MARDI) at Serdang near Kuala Lumpur to establish a program of pasture research. Picture: Dr Kerridge and his research assistant, Mr Abas, sample a stylosanthes experiment with a lime induced zinc deficiency.

Photo: Geoff Wines.

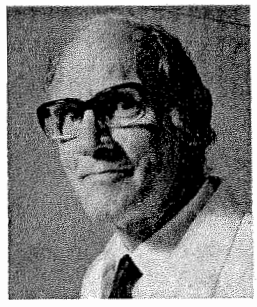
Plant Physiology

Dr R. M. Smillie, leader of the Plant Physiology Unit in the Division of Food Research, Sydney, has been awarded the degree of Doctor of Science by the University of Sydney for his published work entitled 'Biogenesis and Function of Chloroplasts'.

Animal Physiology

Dr A. G. Lyne of the Division of Animal Physiology, at Prospect (right), has been awarded the degree of Doctor of Science by the University of Tasmania for a submission entitled 'Collected Papers on the Biology of the Skin and Hair Growth and other Contributions'. The other contributions deal mainly with the body growth and development of marsupials.

Dr Lyne, a graduate of the University of Tasmania, joined the (then) Division of Animal Health and Production in 1953.



Much of his research has been devoted to the development, structure and growth of skin and hair.

Since 1972, he has been engaged in research on marsupials.

Enthusiast

Would you please send me the recommended price of a soil-testing kit. Can you also send me a lot of booklets about all the things that you do at Commonwealth Scientific and Industrial Research Organization. (Phew! that's a long word.)

— Mary Jones (aged 11).

The Division of Land Resources Management in Perth received this letter and since it is typical of many we receive, we reprint it to show the interest being taken in CSIRO by school children.—Ed.

Stick with safety

Inquiries are often received about the health hazards of two-pack synthetic resin adhesives and surface coatings.

All materials of this type at present on sale can be used safely providing some simple basic precautions are taken, plus any others recommended by the manufacturer.

Used carelessly there is a high risk of skin disease breaking out, the development of allergies and respiratory complaints.

Skin contact with the uncured ingredients must be avoided. Wear plastic or rubber gloves and take care to avoid splashing the face or clothing. Barrier cream on the hands will give additional protection.

In operations such as the application of surface coatings onto large areas and the laying up of fibreglass reinforced mouldings, it is wise to wear an impervious apron and eye protection.

If clothing is splashed, remove it as soon as possible. Clean off any material which has penetrated to the skin with a non-abrasive hand cleaner or soap and water.

Do not use raw solvents, they may damage the skin. If the eyes are splashed, flush with water and get medical attention.

Harmful vapours are given off by many of the uncured materials. Avoid breathing heavy concentrations of these vapours. Use the materials in a well ventilated open area or in a fume hood and follow the manufacturer's instructions when appropriate about any additional precautions to take.

While on the subject of manufacturer's instructions, the following quotes are taken from the safety instructions for an adhesive made overseas:

'The adhesive has also a very strong bonding strength for human skin and its setting is also instantaneous.

'If it gets in the eyes considerable pain will occur. However, never try to open the eyes forcibly. Fever (and acute inflammation thereby) will soon stop, but solid will remain hard and stick strongly.

'Do not become impatient. Several times a day, apply poultice with sodium bicarbonate. Unless you rub the part or try to sever forcibly, you will be completly cured within a week. It is not necessary to send for a doctor.

'When the adhesive gets into your ear, wipe the part several times a day with hot towel. It will disappear in several days.'

Perhaps these could be described as instructions that should not be stuck to.

Gil Barnes, Safety Officer.

SCIENTISTS TALK WITH SWAMI G

'—And it was fun,' writes Roy Muncey

We were received in a friendly fashion at the Hari Krishna's modest Elwood headquarters and invited to leave our shoes in the porch.

We were shown into a room like the lounge of many houses and a chair and sofa pulled forward for us. A low 'throne' in white sheeting was prepared for His Divine Grace with a glass-topped table in front of the throne — presumably for devotions.

Swami G came in smiling and bowing with the superb Indian greetings of the hands in our position of prayer. A varying number of devotees participated in the audience.

A reading followed and we opened with a reflection that while science and technology had helped mankind's material well-being, there was much to do in life quality.

This provoked more reading from the writings of the Swami on the ancient Hindu scriptures. They purported to explain that a Divine Spirit created and sustains all celestial objects, the earth and living creatures, indeed the whole creation.

We were then invited by His Divine Grace to use our scientific expertise to prove from the glories and beauty of creation that there was this Divine Spirit, Vishnu.

The confidence for this, one could see as the exchange of points of view (for it was that rather than discussion) developed, was based on the infallibility of the received scriptures.

We did not launch the obvious point that this view resembled that of medieval Christian theologians, both with regard to the scriptures and creation. Nor that, developing from early work of Schliermacher, the proposition of seeking to find a spiritual creator by examining material creation was judged by present Christian theologians an improper quest and that scriptures, at least Christian ones, have come from men's hands and in less than pure form and so can hardly be seen as infallible and omniscient.

Conversation moved towards milk, the food declared perfect by the sect. It builds the brain, we were told, is connected with motherhood and, by the use of suitable herbs, excellent imitations of meat can be prepared. The belief in sacredness of the cow develops from this view.

Questions regarding the ratio of polyunsaturated fat to total fat touched areas where communication or knowledge or both prevented meaningful discussion. But a gift of CSIRO cheese brought a response of a delicacy called Gulabjan (a sweet bar) which was much enjoyed by our representatives.

We were told, in answer to questions, that the West should learn of India and Asia the true, spiritual values of life, putting aside all superficial and loose living, the trivia of cosmetics, alcohol and drugs.

India could teach us the importance of the spirit, we learned. Our bodies were merely 'dresses' to house the spirit of man.

This contention was based on the dogma of reincarnation (not to be casually dismissed for it is certainly a marvellous guess as the source or basis of 'soul' and 'spirit') and the holiness and peace so often achieved by Asians could well be sought by Australians.

What can I say other than it was fascinating to talk to one of such utter faith and confidence, to see mirrored much of Christian theology of a couple of centuries ago, to marvel at the devotion of his followers (who touched their foreheads where he had walked) and to look through a window at this philosophy of life so alien to my previous experience.

The Hari-Krishna sect in Australia has been 'overjoyed' to have a visit by their divine teacher, His Divine Grace A C Bhaktivedanta Swami (called Prabhupada by his devotees).

During the eight days he spent here Swami G talked to leaders of the churches and when he invited a group of CSIRO scientists to talk with him, Brian Harrap (Food Research), Roy Muncey (Building Research) and Ivan Newnham (Minerals Research Laboratories) were chosen.

Later, Dr Muncey wrote this account of the meeting for 'Coresearch'.

Death of two CSIRO personalities

Mr E. C. B. (Butch) Langfield, OBE, died in Darwin last month and CSIRO lost one of its long-serving staff and a colourful character.

When the news of this death reached Canberra, his colleagues at Black Mountain and in Head Office were full of stories about him for the man was something of a legend in the Organization.

Most of Butch's working life was spent in northern Australia, an area to which he was devoted. He had plenty of opportunities to return south, but always preferred to remain in the Darwin and Kimberley areas.

Butch was born in Western Australia and gained his diploma in botany and genetics from the Western Australian Technical College. He was first employed by the State Department of Agriculture, where his main concern was wheat breeding.

In 1948 he joined the Division of Plant Industry in what was then its Land Research and Regional Survey Section, later to become the Division of Land Research.

Rice breeding

Posted to the Kimberley Research Station he early saw the possibilities of growing rice in the region. He became interested in the crop itself and in the breeding of rice varieties and this eventually became the work for which he won an international reputation.

In 1958 Butch transferred to the Coastal Plains Research Station near Darwin and in 1964 he became its officer-in-charge. In the early 1960s he bred a variety of rice called SIRCNA, a name given to the plant by Chris Christian and Butch, a very rough translation of which means 'CSIRO in Northern Australia'.

This variety has been widely used commercially in northern Australia and in other tropical areas.

In the last few years of his life, Butch had bred another variety which it was thought had equally good commercial potential and it was about to be released at the time of his death. It remains, as yet, unnamed.

For the last year or so, Butch was on secondment from the Division to the Department of the Northern Territory which took over the research station from CSIRO in 1973.

Although Butch never gained a degree, he was admitted to the membership of the Australian Institute of Agricultural Science on the basis of his published results.

His wife died in 1971, but Butch leaves a son and two daughters.

Dr Colin Barnard

Another equally well-known personality who also died last month was Dr Colin Barnard.

Barnie, as he was always known, retired from the Division of Plant Industry in 1969 after having spent almost the whole of his working life with CSIRO.

Another Western Australian, he joined the Division of Economic Botany in 1927 and was seconded to the Commonwealth Research Station at Merbein.

It was there that he carried out research into the yield of the sultana which was largely responsible for the system of forecasting yield in vines that has been of great value to the dried fruit industry.

Drugs from plants

During World War II Barnie was one of the scientists engaged in research into the production of drugs from plants when it became difficult to get imported supplies.

This work led to the utilisation of *Duboisia* as a source of the drug hyoscine, used by troops landing in Normandy on D-Day to quell seasickness. *Duboisia* also proved to be a source for atropine, used in the treatment of malaria, among other things.

Barnie was also associated with the work done on problems with the economic production of other drug plants, particularly opium poppies.

In 1963 he edited the work 'Grasses and Grasslands' which covered the work done in CSIRO during the previous 25 years on grasses and pastures.

Following his retirement he worked with the Organization and the State Departments of Agriculture to produce a register of new varieties of cultivated pasture plants called 'Herbage Plant Cultivars'.

While Barnie's scientific reputation was widely known, he also built up another for himself among sportsmen in Canberra. He was well known on the bowling greens of the ACT and played in and organised table tennis competitions.

He is survived by his wife, Joyce, and four sons.

Ornithologists hold Congress

More than 700 amateur and professional ornithologists were in Canberra last month for the 16th International Ornithological Congress — the first ever held south of the equator.

Excursions to Papua New Guinea, New Zealand, Perth, Darwin, Alice Springs and Melbourne were arranged before and after the Congress and during the conference there were daily early morning bird watching trips to the Canberra Botanic Gardens and a mid-week visit to Tidbinbilla and Burrinjuck Waters Park.

The massive task of organising the Congress was in the hands of Dr Harry Frith, Chief of the Division of Wildlife Research.

He was elected its secretary-general at its last four-yearly meeting in The Hague in 1970.

He then invited the Congress, on behalf of the Australasian Ornithologists Union and the Australian Academy of Science, to hold their next meeting in Australia.

He immediately chose the Congress' 1974 symbol, a magpie goose, a uniquely Australian bird, and began, with members of his Division, to plan the meeting.

The final organisation became an enormous headache as the Congress was scheduled to start at the height of the industrial disputes which upset interstate travel.

The day before, delegates were stranded all over Australia but after an enormous co-operative effort by Wildlife Research and other Divisions the official opening was postponed by only eight hours and almost all the participants were in Canberra by the following day.

More than half the delegates were from overseas, many attracted by Australia's rich and unique bird life.

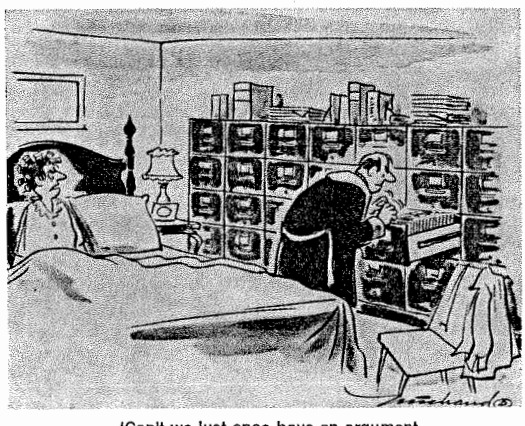
As the President, Professor Jean Dorst, from France, observed:

'What country could compete with Australia?

'A continent full of parrots, cockatoos, megapodes, emus, honeyeaters and fairy wrens; where almost every plant, every insect, every mammal differs widely from what can be seen elsewhere in the world.'

Atmospheric Physics

Mr R. J. Taylor of the Division of Atmospheric Physics has been appointed Chairman of the Working Group on Atmospheric Boundary Layer Problems. The group was established by the World Meteorological Organisation's Commission for Atmospheric Sciences.



'Can't we just once have an argument without you verifying everything?'—
—'Saturday Review.'

For your information

Policy circulars

74/24 Salary adjustment — technical and drafting staff
74/25 Salary adjustment — trades staff, laboratory craftsmen, assistants workshop and handymen
74/26 Travelling, meal and living away from home allowances
74/29 Superannuation — new scale of units of pension
74/30 Assistance with studies
74/32 Salary adjustment — administrative and clerical staff
74/33 Salary adjustment — housekeepers and housemaids

Information circulars

74/44 Queen Elizabeth II Fellowships
74/47 Division of Irrigation Research — Acting Chief
74/49 CSIRO Directory 1974 (Amendments)
74/52 Acting Chief — Division of Horticultural Research
74/53 Assistant Chief — Division of Building Research
Tropical Cattle Research Centre, Rockhampton (Redesignation of Cattle Research Laboratory, Rockhampton; appointment of Dr J. E. Vercoe (Officer-in-Charge); Mr A. Packham (Manager) at Belmont)
Officer-in-Charge, Central Information Library and Editorial Section. (Mr P. J. Judge takes up appointment 5.8.74)

'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.
Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478 or Wendy Parsons, 48 4227.

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October 1974

Man or woman?

'We want the best,' says Staff section

Out of a total staff of 6705, CSIRO employs 1500 women. Currently 11 women — three senior principal research scientists (SPRS) and eight principal research scientists (PRS) earn salaries which can be equated with the Australian Government Second Division salaries.

By contrast, the number of women employed in the Government's Second Division as at 1 September, was four.

These figures — and many more as interesting — were revealed when Head Office Staff Section delved into the position of women employed in the Organization. This was in response to questions asked by 'Coresearch'.

The inquiry was timely for 1975 has been proclaimed by the United Nations General Assembly as International Women's year and Staff Section was about to undertake a survey of women employed by CSIRO for the information it needed for the Australian Government's program next year.

There are about 1100 research scientists and 900 experimental officers employed by CSIRO at the moment.

When expressed as a percentage of the total number in each group, women constitute 2.5 per cent of the research scientist group and 11.7 per cent of the experimental officer group.

So far as 'Coresearch's' survey could determine, there has never been a woman Chief, but there has been a woman Acting Chief — Dr K. R. Makinson of the Division of Textile Physics. Staff Section pointed out, however, that under the merit system which operates in CSIRO, the Organization requires that the best applicant be selected, male or female. There is therefore no formal barrier to the appointment of a woman Chief.

Similarly, there is no known record of a woman being a permanent officer-in-charge of a research station, but Deniliquin did have one woman, Ms Veronica Rogers, employed at EO3 level acting in this capacity for 12 months during 1966.

	No. of staff	Males	Females	Females % total staff
APS	266,752	196,476	70,276	26.3
CSIRO	6705	5205	1500	22.4

Pro rata

In any comparison made between CSIRO and the Public Service (and in this context 'Coresearch' was concerned only with the Australian Public Service and not that of the States) the figures have to be considered on a pro rata basis.

Destination of First Degree Graduates	Male %	Female %
Teaching	25.1	50.5
Higher studies	23.3	18.6
State Government	13.7	8.0
Private sector	21.4	6.9
Australian Government	9.8	5.1
Other	6.7	10.9
Total	100.0	100.0
Approximate No. for 1973	12,389	6136

Staff in the SPRS range are at present paid between $19,319-$21,285 and PRSs receive salaries ranging from $16,060 to $18,299. The basic salary for Second Division officers is $17,776.

CSIRO employs a further eight women as senior research scientists ($13,424-$15,456) and eight who are research scientists ($10,448-$12,944).

In the category of experimental officers, there are 40 women employed at EO1 level, 33 at EO2, 29 at EO3 and four at EO4. Their salaries range from $7000-$14,952. The salaries quoted are those current at the time of going to press.

Staff figures show that the first woman to attain SPRS did so in 1965, but it should be noted that as from 1959 there were women employed as senior principal research officers, the equivalent then of an SPRS.

So far, only one woman has become an Assistant Secretary. She was Ms Betty Doubleday who, until her retirement a few months ago, was Chief Librarian.

Technical staff

CSIRO employs about 2000 technical staff. Among the TA1s (technical assistant grade 1) 52.2 per cent are women; 35.7 per cent of the TA2s are women.

From the technical assistant grades technical staff can progress through the technical and senior technical officer ranges to STO3 level. The number of women tapers off dramatically here (as it also does with men) and they form only 3.7 per cent at STO2 level. No women have reached the STO3 level.

To become a technical officer, a person is normally required to have a technical certificate or its equivalent; this involves four years part-time tertiary study. The relatively small number of women employed in the higher technical grades suggests that in the past, few women were prepared to seek such qualifications in the subjects required by CSIRO.

CSIRO employs 442 clerical and administrative staff, 58 of whom are women. On a pro-rata basis the number and distribution of women in this

Cont'd on page 4

Helen Newton Turner

New Chief arrives

Professor J. M. Gani has taken up his appointment as the new Chief of the former Division of Mathematical Statistics. Concurrently with Professor Gani's appointment has come the change of the Division's name to Mathematics and Statistics.

Postponed

The 1974 Farrer Memorial Oration and Medal presentation ceremony has been unavoidably postponed until 27 February.

The Medallist, Dr Helen Newton Turner, will speak on 'Hidden Treasure: Genetic Diversity in Plants and Animals'.

Chairman to go to Paris

The Chairman, Dr J. R. Price, will be a member of the Australian delegation at the confrontation meeting of the OECD representatives in Paris on 22 October at which the report on the Australian national science policy will be presented.

The report will be discussed and questions arising from it will be raised with the Australian delegation.

The questions are expected to deal with Government research activities, university research activities, industrial research funding and the national science policy.

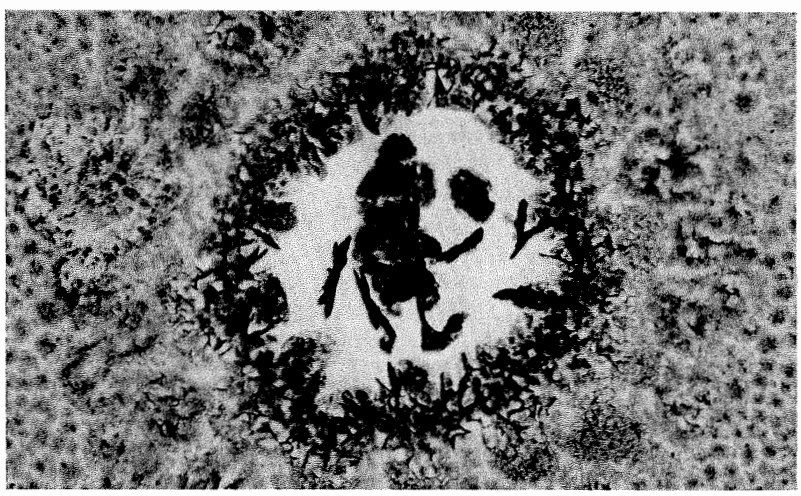
Members of the OECD Committee for Science and Technological Policy, drawn from all OECD member countries, will take part in the discussions.

The background report on science and technology in Australia and the Examiners' report are now available, and an account of the meeting should be published later this year.

Congress

Dr C. Nancarrow of the Division of Animal Physiology at Prospect will attend the international Congress of Hormonal Steroids in Mexico City where he will present a paper. He will also visit leading overseas research centres concerned with the prostaglandin work being undertaken by the Division.

We've found one at last



CSIRO has been looking at the chemical reactions of very small particles with an electron microscope.

In recent months usually reliable reactions would often fail to occur for no obvious reason, leading to the hypothesis that gremlins were at work.

Final proof was only obtained in August when one was caught at play inside an ammonium sulphate particle. As far as the Division concerned is aware, the photograph above is the first genuine record of a gremlin and reveals some hitherto unknown features.

Perhaps the most startling is that he wears a beanie and plays football. However, a discarded catapult can be seen at one side of the ring and this may well be his usual offensive weapon.

It is not surprising that micrognemlins haven't been previously observed under the microscope, for the height of this one (and he looks to be an adult) is only 0.46 micrometres estimated from the top of the head to the ankle.

RAAF flies Wildlife team into survey area

The RAAF No 5 Helicopter Squadron has come to the aid of the Division of Wildlife Research in Canberra.

A small research team, headed by Dr Alan Newsome, had to get into an isolated area of Kosciusko National Park to discover if dingoes leave the snow country for farmlands during the winter.

Failure to get in at the right time meant a research program was in jeopardy.

Efforts to get into the rugged, mountainous country either by walking or by four-wheeled drive vehicle failed and when the exercise looked doomed, the RAAF came to the rescue.

A request was made to the Department of Defence's Air Office by the Canberra RAO, Mr Ken Prowse, and a helicopter under the command of Flight Lieutenant Mike Haxwell, flew the three men into the area as part of the Squadron's snow manoeuvre exercises.

Four days later, with their mission completed, the men were flown back to Canberra.

The work on the movements of dingoes in the Park is part of a 10-year research program on the basic biology and ecology of the dingo both in Central Australia and South East Australia, which began in 1966.

The Division started the work at the request of the Australian Meat Research Committee, which largely funds the project. At first it was mainly concentrated in the Alice Springs area but was extended to South East Australia, in particular the Nadgee Nature Reserve in 1968, and about a year ago moved into the much more difficult terrain of the Kosciusko National Park.

At present Dr Newsome's problem is to check if dingoes leave the snow country in winter for sheep country lower down, as sheep farmers around the Park complain of dingo attacks.

This, said Dr Newsome, posed a difficult environmental management problem which could only be solved by research.

Radio check

In March this year the research team caught a dingo bitch near Tin Mines Huts, 16 km south of Thredbo, and attached a small radio transmitter to her neck so that they could track her movements during the winter.

The Wildlife team was able to follow the bitch's movements periodically by detecting signals from the ground and from a weekly charter flight over the area from Cooma after the first snow falls.

Following the first heavy snow fall in June the signals stopped — after 75 days of operation.

Dr Newsome was then confronted with the problem of what had happened to the dingo. Had she left the area for lower ground? Had the radio stopped transmitting or had the bitch gone underground during the day to feed pups?

Bogged down

It was decided that the team of two technical officers, Mr Hans Dimpel and Mr Keith Newgrain, and Dr Newsome, must get into the area to check up.

They first tried entering from Dead Horse Gap, near Thredbo, but bogged their snow-cruiser in soft snow.

They next tried getting in by landrover via Barry Way but the Jacobs River was swollen so they decided to go in on foot lugging all their supplies and cold weather gear on their backs.

This involved a steep climb from the top of Stockwhip Hill (about 1800 m) for radio surveillance. They were still 10 km away from the huts and could go no further because of knee deep snow.

Blizzard

After spending what Dr Newsome describes as his coldest night ever and when a blizzard then sprang up in the morning to top that, the party decided to return to Canberra.

They detected no signals from the dingo and found no tracks in the snow except for those of fox, wombat and rabbit.

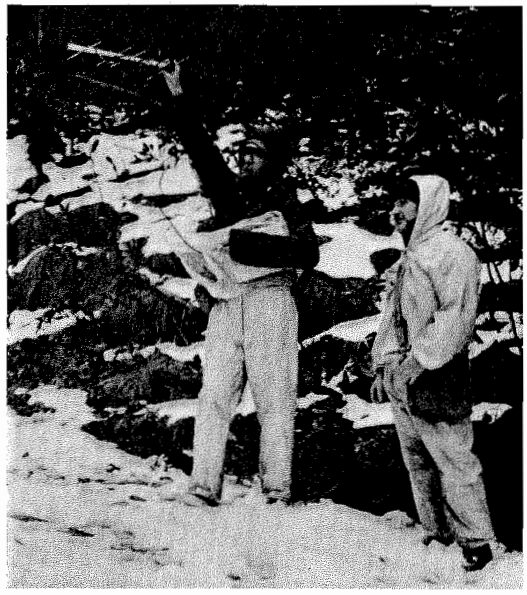
They suspected that the dingoes could have left for lower country but to be sure they needed to get right into the Tin Mines Huts area, near Thredbo.

During the four days Dr Newsome and his team walked about 75 km around the hut area noting dingo tracks and collecting droppings to check on their winter diet.

This they found was mainly wombat, wallaby, rabbit and brumby and an unexpected item — yabbie.

Dr Newsome says that the evidence now indicates that dingoes may not leave the Tin Mines Huts area during the winter despite heavy snow, but they must now check up on areas nearer the edge of the Park such as the Ingeegoodbee and Jacobs River areas.

They plan to catch and radio tag a number of dingoes and continue their work in the park next summer and winter.



Keith Newgrain (left) and Hans Dimpel carry radio telemetry equipment into the research area.

The RAAF helicopter lands the party at Tin Mines Huts.

Apprentices win awards

Apprentices at the Division of Chemical Physics again received top awards for craftsmanship during the 1974 Apprenticeship Week organized by the Apprenticeship Commission of Victoria.

Robert Cathie, a fourth year apprentice, won the Bronze Medallion for instrument making with an electric discharge machine which he designed and constructed for micro-machining high-precision components.

Robert was also named as runner-up in the L. H. Waite Craftsmanship Award given to the most outstanding contribution in the exhibition, and received a consolation prize in the Yakka Award for Originality in Craftsmanship.

Another fourth year apprentice, Patrick Francis, won the Bronze Medallion in precision optics for his exhibit of a telephoto lens for use in photography.

For both apprentices this is the third Bronze Medallion in a row.

Michael Pless, at 17 a relative newcomer to the patient work of optical finishing, appears to be treading a similar path. After only six months training in the Division he received an Honourable Mention Certificate in the precision optics section for exhibiting a glass sphere and matching pair of test plates.

Dr G. R. Hercus

Dr G. R. Hercus of the Solid State Chemistry Section of the Division of Chemical Physics, Clayton, died recently after a long illness.

He first joined CSIR's Division of Industrial Chemistry in 1946 and was immediately sent to Pasedena for instruction in the use of a mass spectrometer then being manufactured in the United States.

When this was later shipped to Australia, Dr Hercus was responsible for its installation at Fishermen's Bend. This was the first commercial mass spectrometer to be used in this country.

In 1950 he left to take up an ANU research scholarship at Oxford and while there gained his Ph.D. degree.

Returning to Australia Dr Hercus rejoined CSIRO where he worked for the rest of his career.

Apart from his scientific work, Dr Hercus had a keen interest in Aboriginal languages and with his wife, a senior lecturer in Sanskrit at the ANU and a lecturer in linguistics at Monash University, he spent many holidays living with Aboriginal communities in the South Australian outback to record the voices of the few remaining speakers of ancient languages such as Aranda.

Which way for whey?

Two members of the Whey Products Section of the New Zealand Dairy Research Institute, Messrs J. A. Kavanagh and M. F. Parkin, have spent 10 days in Australia discussing problems associated with the introduction of new processes to make a range of products from whey.

They were also concerned with the research which has been undertaken into reducing the potential of whey as a pollutant.

The urgency of these problems has led to a major collaborative research program in Australia with the Dairy Research Laboratory of CSIRO's Division of Food Research, the Division of Chemical Engineering, the Gilbert Chandler Institute of Dairy Technology, and the Ellinbank Dairy Research Station, Victorian Department of Agriculture.

Problems similar to those in Australia confront other dairying countries, and in view of the urgency and complexity of the scientific nature of the work, Australia has explored the possibilities of collaboration with New Zealand.

Philippines get new phytotron

The Australian Government has donated a phytotron to the International Rice Research Institute at Los Banos in the Philippines.

The formal dedication ceremony took place on 23 September when the phytotron was officially opened by the Australian Minister for Science, Mr W. L. Morrison.

Among the Australians attending the ceremony were Dr L. T. Evans, Chief of the Division of Plant Industry, which has been closely associated with the project, Sir Otto Frankel, CSIRO Research Fellow and a former member of the Executive, and Mr Henry Nix, Division of Land Use Research.

Included in the Ministerial party were Messrs Terry Healy, science liaison officer, and Bill Pinwill, press secretary.

The gift of the phytotron had its beginning when Dr Robert Chandler, the first director of the International Rice Research Institute (IRRI), made a request to the Australian Government that such a laboratory should be given to the Philippines under its aid program to that country.

He knew of the success of the CSIRO phytotron in Canberra where plant scientists from all over Australia have access to the environmental laboratory. This allows them to pinpoint which environmental factors regulate the various processes of growth and development in plants and gain a better understanding of how plants respond to their climatic environment.

The Government agreed to the project and since then the Los Banos phytotron has been built with the assistance of both the Australian Department of Housing and Construction and CSIRO.

Both the Division of Plant Industry and the Head Office Building Section have been closely involved with the work.

Associated with the opening, IRRI staged an international symposium on 'Climate and Rice' at which Dr Evans and Mr Nix gave papers. Dr Evans also chaired a session on 'Climate and Crop Productivity'.

The Minister's visit to the Philippines coincided with a long-standing invitation to go to Manila so that possibilities of further scientific collaboration between the two countries could be explored.

Staff fly to Peking for Trade Fair

Six members of CSIRO were scheduled to leave Australia this week for China to take part in the Australian Exhibition to be staged in Peking this month.

They are Mr E. E. Bond, Director of the Bread Research Institute of Australia; Dr Mark Hutton, Chief, Division of Tropical Agronomy; Dr M. (Pip) Lipson, Chairman, Wool Research Laboratories Committee; Dr Helen Newton Turner, Research Fellow; Dr J. E. Vercoe, Officer-in-Charge, Tropical Cattle Research Centre, and Dr Don Weiss, Chief, Division of Chemical Technology.

Most of the 350 Australians who will be attending it were airlifted on special charter flights on 1 and 3 October.

A total of 102 Australian companies will exhibit products worth more than $2 million at the display which in itself has cost about $1 million to organise and erect.

The exhibition will run from 11-23 October but top-buying Chinese officials will be given a special preview before the official opening.

The exhibition, which has been organised to further develop Australia's trade and general relations with China, will be opened by the Deputy Prime Minister of Australia, and Minister for Overseas Trade, Dr J. F. Cairns.

The products which will be displayed will place emphasis on Australia's development in the agricultural, pastoral, mining and minerals, and transport and communications industries.

The exhibition is the biggest and most complex trade display Australia has mounted overseas and apart from the exhibition itself, a number of additional activities have been organised. These include technical discussions and seminars involving Australian scientists, academics and technical specialists.

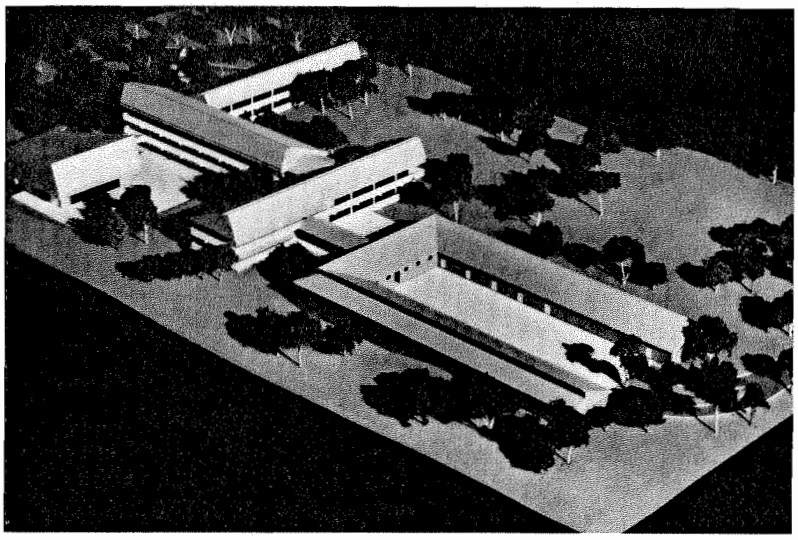
CSIRO staff will be taking part in these and the five representatives will be speaking on aspects of their work in Australia.

The Organization has also produced background material in the form of films and slides for the speakers.

The five scientists hoped to be able to take advantage of the visit to investigate aspects of their own specialised interests while they are in China when the exhibition is over.

Dr Hutton hoped to take a look at plant breeding centres and agricultural institutions, Dr Weiss expressed the wish to look at water, waste water and forestry research institutes, and Dr Vercoe hoped to have the chance to compare aspects of meat production with those of Australia.

Dr Lipson's interests lay in the field of woollen mills and a silk processing plant as well as textile research and manufacture, Mr Bond had similar ideas for the manufacture of flour, bread and biscuits, while Dr Newton Turner was keen to follow up previous research into Chinese sheep breeding and wool production, particularly where it was related to carpet manufacture.



This model of the new Animal Husbandry Research Centre was built by the Department of Housing and Construction for CSIRO and sent to Indonesia where it will be on display at the National cattle show in Surabaya and then in Jakarta.

Photo: Courtesy Department of Housing and Construction.

Appointments made for Indonesian Lab.

Professor David Robinson from the University of California, Davis, has taken up a year's appointment as acting research director of the new Animal Husbandry Research Centre near Bogor which CSIRO is establishing as part of the Australian aid program to Indonesia.

Professor Robinson was one of the four-man team which undertook a feasibility study in 1972 and later recommended the setting up of the Centre at Ciawi on the island of Java.

He has had close associations with CSIRO and worked for three years with the Division of Land Use at the Kimberley Research Station at Kununurra, Western Australia, before joining the University of California six years ago.

Professor Robinson gained a B.Sc. in Agriculture and a Ph.D. in Nutrition at Nottingham University, England, and worked at the Liverpool Veterinary School for three years before emigrating to Australia.

His main interest is nutrition and he has taken part in a number of F.A.O. nutrition projects and made a major contribution to California University's Task Force on world food problems which has published a report in two volumes — 'The Hungry World — a Challenge to Agriculture'.

He has also spent some time with the University of California's exchange program with the University of Santiago, Chile, funded by the Ford Foundation.

Professor Robinson established a close working relationship with Dr L. J. Lambourne, the head of the new Centre, when they worked together at the Division of Animal Physiology's former Beef Cattle Research Unit in Brisbane, during the northern 'wet' seasons.

He left Australia on 10 September for an initial visit to the Centre and plans to return to Canberra in late November or early December. He will take up permanent residence there with his family in January.

Staff attend conference

About 30 overseas and 60 Australian scientists met in Sydney for a conference entitled 'Optical Information Processing'.

Organised by the Australian Academy of Science for the International Commission for Optics, the conference was staged to allow delegates to discuss the rapidly growing field of physics, astronomy and communication engineering.

A number of CSIRO staff were concerned with the conference which was officially opened by Dr A. Walsh (Chemical Physics) and among the speakers was Mr P. E. Ciddor (National Measurement Laboratory).

Technical papers were delivered by Dr Paul Wild, and Mr T. W. Cole (Radiophysics), and Dr P. Hariharan (National Measurement Laboratory).

During the conference delegates visited both the National Measurement Laboratory and the Division of Radiophysics.

Secretary

Mr Bevin Pope, of the Head Office Finance Section in Canberra, has been appointed secretary to the Centre.

He will take up his position in January after completing a language course he is now working on.

Home for Bevin will be in Bogor where accommodation is being arranged for both CSIRO staff and for three people from the Australian Department of Housing and Construction.

CSC meets in Zambia

When the Commonwealth Scientific Committee (CSC) held its eighth conference in Zambia, CSIRO was represented by Mr I. D. Gordon of Head Office, Canberra, and Mr R. D. Croll of ASLO in London. The Australian delegation was led by Mr G. B. Gresford of the Department of Foreign Affairs.

CSC has been a means of collaboration between the government scientific organizations of the British Commonwealth and CSIRO has had a close association with it throughout its history.

In addition to its active role on the Committee, the Organization has provided two of the executive secretaries, including the current holder of the office, Mr Gwyn Thomas, who has been seconded from the Division of Plant Industry.

At the Lusaka meeting major seminars were held on national science organization, technical developments and the environment and geological surveys. The Committee also took decisions in Lusaka that may lead to re-inforcement of the capabilities of the Commonwealth Scientific Committee in its task of improving scientific exchanges between member countries and assisting the younger member countries of the Committee to develop their scientific research ability.

Delegates this year had the opportunity to see some of the Zambian copper mining and minerals research activities.

LETTERS

I read with interest the article ('Coresearch 183') on 'Clothes burn and so do kids'. It is a subject which is dear to my heart as I am the mother of a four-year-old daughter who likes to wear frilly feminine things.

The frustration of the researchers must be great when they see the results are not being acted upon and that the advancing cost is in terms of children's lives or injuries.

But their frustrations are different from mine. I am on the buying side of the fence.

I want what is best and safest for my child and fortunately I am in a position to be able to afford most of these things.

Because I am in this reasonable financial situation I am able to have my home heating systems themselves in a safer form. Perhaps I am also in a position to better police my child's playthings and playing habits in an endeavour to exclude things like matches.

Even Dorothy Braxton's perambulations around the stores high-lighted the exorbitant cost of preventive measures.

It would seem unreasonable to place the blame fully on the retailer, he can hardly be expected to maintain stocks of expensively, almost luxury, priced articles when there is no sale expected.

Therefore it appears to me that those in greatest need of these materials and garments are being priced out. The cost is high enough to be prohibitive on more than just the lower levels of our financial strata and even if it is not deemed prohibitive, it is sufficient to cause comment in that direction.

Can there not be some form of subsidy for the manufacture of these articles.

The question 'Can I afford it?' with its horrific answer of 'No' would become a thing of the past. I realise that the education program would still need to continue for there will always be some 'it-was-good-enough-for-grandma-' types, but that battle must be almost won, surely.

If the need for this research is present, then the need for bringing the tangible results to within the reach of everyone concerned is at least as great as for the research. Otherwise the research is made null and void.

I am not in a position to dictate and my opinion is based on my own personal involvement and observations, but from my standpoint as a mother and a purchaser it seems reasonable to consider such a subsidy.

I do my best to prevent a 'Mary Ann Jones' in my family but it doesn't prevent my concern for those who through circumstances beyond their control, are unable to follow the advice of people like Mr A. Murray Clarke and Dr Tom Pressley.

A. Gardner,

Division of Mineralogy, Perth.

Leading lights for safety

Have you ever been in a window-less area when unexpectedly the door has been shut and the light put out? If so you will know just how hard it can be to find the way out or locate the alarm button.

To be shut in a refrigerated room in these circumstances can be quite frightening—those emergency release catches are much harder to operate in total darkness, although the thought that everyone else may have gone home for the night can help to summon up reserves of strength.

Some laboratories sensibly plan for such emergencies by using self-powered lamps to mark escape routes, exits and alarm buttons.

These lamps, known by the trade name Betalights, are available in a variety of shapes, sizes, colours and intensities. They are absolutely reliable, need no wiring or batteries and are maintenance free.

The photographers at Chemical Technology have found a small version exceptionally useful when attached to the cords controlling the light switches in their darkroom.

It emits sufficient light for locating the cord but does not fog film beyond a radius of about 150 mm.

Don't be left in the dark. Have a look around to see if you can find a location where these lamps should be installed.

Gil Barnes,
Safety Officer.

Division says farewell to husband and wife team

The Division of Irrigation Research at Griffith has farewelled two of its old friends, Dot and Arnold Dreyer.
Arnold and Dot Dreyer attended a farewell function from the Division of Irrigation Research at Griffith. Among the presentations made to them was a photographic record of Division activities, a traditional Division gift to anyone leaving the staff after long service.

There are comparatively few husband and wife teams working in CSIRO and it is seldom that the two are both employed in the one Division.

Around the Division of Irrigation Research, however, the names of Arnold and Dot Dreyer are equally well known and there was a large number of friends present when the Division held a party to honour Arnold on his recent retirement.

Arnold joined the Organization way back in 1936 as a semi-permanent labourer at Farm 466 Hanwood. Three years later he was appointed to the permanent staff as farm foreman.

He remained there until he joined the armed forces in 1942. A year later, Arnold had to return from the war to manage his father's property and it was then that the officer-in-charge, Mr Eric West, noticed he had a mechanical aptitude and was useful with tools.

Arnold was persuaded to return to the Division as a carpenter and then became Senior Laboratory Craftsman.

Over the years, Dot Dreyer has also worked for the Organization as a part-time clerical assistant and contractor in the laboratory's canteen.

Among those who attended the party were a number of colleagues from Sydney and Canberra and a former member of the Staff and the former Minister for Immigration, Mr Al Grassby.

Arnold was presented with a gold watch and a bank account by the Chief of the Division, Mr Eric Hoare.

ACOA meeting draws crowd

About 100 people attended the annual general meeting of CSIRO's Canberra branch of ACOA, including members of the Executive and Secretariat.

Members who had been around CSIRO for many years said it was the best attendance they had seen.

The Chairman, Dr J. R. Price, addressed the meeting, outlining the importance of administrative and clerical personnel as a vital support group for the scientific functions of the Organization.

After the formal part of the business — no new officers had to be elected — refreshments were served.

Astronomer in USSR

The Division of Radiophysics much travelled Chief, Dr Paul Wild, has been visiting the USSR on behalf of the Department of Foreign Affairs as the convenor of a meeting arranged under the auspices of the USSR-Australia Agreement on Science. Dr Wild hoped to inspect centres of radioastronomy research in Moscow, Leningrad and the Crimea as well as Moscow.

Dr Wild also attended meetings in the UK and made a visit to the Blind Landing Equipment Unit and the RAF Establishment at Farnborough.

The last part of his tour took him to Turkey to attend a meeting of the International Council of Scientific Unions.

'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.

Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478 or Wendy Parsons, 48 4227.

CSIRO Women

Cont'd from page 1

group is about equal to the Public Service.

Outside factors

While it's true women are not employed in equal numbers on the staff in the scientific and experimental officers' areas, an investigation shows that this is a factor determined more outside CSIRO than inside it.

A recent survey on the 'Employment Destinations of Australian University Graduates' indicates how true this statement is.

In addition 41.5 per cent of all male first degree graduates hold degrees in fields directly related to research conducted by CSIRO, whereas only 24.6 per cent of all women first degree graduates hold similar degrees.

While CSIRO may not employ, in the overall picture, a great many women, Staff Section points out that in the first place women with the qualifications CSIRO wants in the scientific and technical categories are not necessarily available. However, as more women graduate from universities and other tertiary institutions, so should more come into the Organization's work force.

'CSIRO', it said in a statement to 'Coresearch', 'endeavours to attract the person best for the job having regard to applicants. It is not a relevant consideration whether the applicant is a man or a woman.'

Scientists for Canada

A CSIRO delegation last month attended the 10th Commonwealth Mining and Metallurgy Congress in Canada.

Included in the group were Mr Lewis Lewis, a member of the Executive; Mr Ivan Newnham, Director of the Minerals Research Laboratories; and Drs M. F. R. Mulcahy, D. F. A. Koch, E. H. Nickel, G. H. Taylor, R. A. Durie, R. J. Holmes, D. E. Ayres, T. R. Scott and K. McG. Bowling, and Messrs W. E. Ewers, and D. E. Roney, all of the laboratories.

Most of the officers will undertake some additional travel while they are away and Dr Koch attended an International Power Sources Symposium and the International Society of Electrochemistry in the U.K. before the event.

Dr Mulcahy also took part in the International Combustion Symposium in Tokyo.

LONDON LOG

The cultivation of Australian plants in the UK brought to our attention by the reference in 'Coresearch 174' to the successful out-of-doors propagation of *Eucalyptus nitens* at the Macaulay Institute of Soil Science, Aberdeen, prompts this further note on the same theme.

At ASLO in London we now have a modest collection of Australian 'natives' thriving in pots located just inside a window facing south-east where they receive sunshine and warmth and, most important, regular watering by our receptionist.

These plants, purchased from a nursery in the Dandenongs near Melbourne and washed to remove soil from the roots, were packed in moss and transported with passengers' luggage via USA to London. Of the original 12, seven survived the journey.

Botanists and environmentalists may like to know that the collection includes a Kurrajong (*Brachychiton populneus*) also *B. Acerifolium, Melia azederach* and a species of *Crinum*, all of which have at least doubled in size within the past few months.

The other three, also healthy but less vigorous, are *Eleocarpus cyaneus, Blandfordia flammea* and *Doryanthes palmeri*.

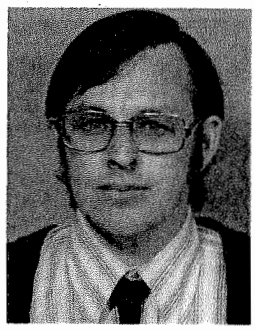
In addition, a good specimen of *Eucalyptus gunnii* commonly sold for planting out-of-doors in England, has been acquired for the ASLO collection from a local nursery.

Some of our visitors have remarked that Australia may well develop a new industry, based on the export of her native flora, and ASLO likes to think it is making a small contribution to this end.

As will be widely known to Australians who have visited the UK, the Royal Botanic Gardens at Kew have devoted one of their heated glasshouses entirely to our native flora. On a visit to the Gardens earlier this year a 5 m high Cootamundra wattle (*Acacia baileyana*) and various species of *Callistemon* and *Grevillea* also in full bloom were a sight to behold.

The contrast with the surrounding hoar frost-covered lawns, shrubs and trees as far as the eye could see outside was truly spectacular.—F.G.L.

Newcomer



Dr Ian White (above) has joined the Division of Environmental Mechanics at Canberra as a member of the soil physics group. Dr White recently returned to Australia after four years in the United States where he worked first at the Distillation Research Laboratory at Rochester (N.Y.) Institute of Technology, then the School of Chemical and Biochemical Engineering, University of Pennsylvania.

The CAGA hits the fan

SYDNEY. — Sydney City Council is facing an embarrassing problem of international proportions.

The problem is a 46 foot by 10 foot sign with bright orange letters reading "CAGA", which is to be erected on top of a new office skyscraper in the heart of the city.

In Australia, CAGA stands for Commercial and General Acceptance Ltd. but, according to reliable sources, it is also a rather dirty word in Spanish.

And, enter the red faces, the proposed spot for the sign faces into the State reception area of the NSW Government office block opposite: the place where international notories, and presumably the occasional Spanish dignitary, are entertained.

—The Age, Melbourne

And in Canberra they're asking what about the Regional Administrative Office which is located in that City's CAGA Centre?

Or for that matter where several Head Office groups are housed?

Even the editorial offices of 'Coresearch' can be found there.

There are no prizes for those who say some of us have found our niche in life.

For your information

Information circulars

74/59	8.8.74	ANZAC Fellowship Scheme New Zealand Awards
74/60	9.8.74	Capital Works under control of CSIRO
74/61	9.8.74	Staff Relations Seminar (postponement)
74/36	14.8.74	Division of Environmental Mechanics — Acting Chief (Dr E. F. Bradley 26.7.74 to 30.9.74)
74/63	14.8.74	Assistant Chief — Division of Mineral Chemistry (Dr A. F. Reid)
74/64	20.8.74	Australian Agricultural Council Extension Fellowship Scheme (closed 30.8.74)
74/65	20.8.74	The Edgeworth David Medal 1974 (closes 28.10.74)
74/66	23.8.74	Head Office Arrangements (during absence overseas of Mr L. G. Wilson and Mr H. C. Crozier)
74/67	26.8.74	Acting Chief — Division of Mineral Chemistry (Dr A. F. Reid 23.8.74 to 7.10.74) Acting Chief — Division of Building Research (Dr F. A. Blakey 30.8.74 to 22.10.74)
74/68	29.8.74	Acting Chief — Division of Chemical Physics (Dr A. Walsh 2.9.74 to 23.10.74) Acting Chief — Division of Food Research (Dr J. H. B. Christian 3.9.74 to 19.10.74)

Policy circulars

74/34	15.8.74	Salary Adjustment — Translators
74/35	15.8.74	Salary Adjustment — Library Officers
74/36	28.8.74	Salary Adjustment — Research Scientists, Experimental Officers, Engineers, Scientific Services Officers, and Architects
74/37	2.9.74	Superannuation — New Scale of Units of Pension

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coresearch 186

Produced by the Central Communication Unit for circulation among members of CSIRO staff

November 1974

Research program to probe secrets of rock lobster

CSIRO's Division of Fisheries and Oceanography is now spending close to a million dollars a year on its research program on the western rock lobster.

It is hoped that the project will solve the mysteries still surrounding the larval and juvenile stages of this crustacean, as well as identify their place in the marine communities of this little known area.

How valuable is an industry that warrants such an expenditure?

Dr Graham Chittleborough, Officer-in-Charge of the Division's group at Perth, feels statistics speak for themselves.

Australia is the world's largest producer and exporter of rock lobsters and the western species is the most important, accounting for 58 per cent of the total catch.

Apart from domestic consumption, nearly 5½ million kilograms of lobster is exported with the current value being more than $32 million.

The day-to-day implementation of State and Australian Government policies for the management of the fishery is the affair of the W.A. Department of Fisheries and Fauna, while the Fisheries Division of the Australian Department of Agriculture is responsible for undertaking economic surveys, for financing some of the scientific surveys, and acting as advisers on the export standards. The Department of Agriculture is also responsible for the management of the fishery beyond territorial waters.

CSIRO's Division of Fisheries and Oceanography on the other hand, is concerned mainly with the biology of the rock lobster, including its ecology, physiology and behavioural patterns.

When the Division first began work on the species in 1946, the very small unit was confined to helping in the development of the fishery. In recent years, the project has been expanded in an effort to understand the pressures operating at various points in the life cycle and to determine the rate at which the population is replenished.

Last year, the research vessel 'Sprighlly' became available under charter and now with the teething problems of last summer behind them, the group is set for an all-out effort this coming season.

Graham himself is particularly interested in both the larval and juvenile stages of the lobster.

'A female rock lobster is mature at six or seven years of age', he explained. 'Mating takes place during the winter or early spring and the eggs are laid (about 300,000 a female) in the spring and early summer.

'These are carried on the "berried" female's abdomen for three to nine weeks (depending on temperature) until the larvae hatch. As the newly hatched larvae concentrate at the surface, we can measure their density and get an index of the condition of the breeding stock on the continental shelf.'

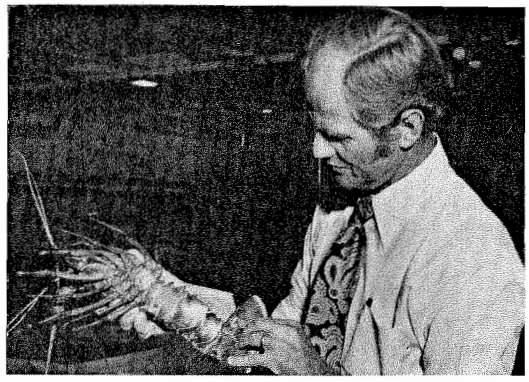
This is where 'Sprighlly' should prove her worth.

The larvae are soon carried up to 1000 km out to sea by surface wind drift and currents where they stay for the next nine to ten months. Without a vessel to track their movements and a sound knowledge of the currents which affect them, it's impossible to follow them.

George Cresswell, a member of the Division's staff at Cronulla, assisted by Terry Golding and Fred Boland, is using a variety of techniques to study water movements in the area.

In the summer they will be laying from 'Sprighlly' a series of up to 15 buoys attached to drogues at set depths off the west coast of Australia. Each of these is worth about $2000. Radio-equipped, they will be checked by the U.S. weather satellite 'Nimbus-F' each time it passes overhead.

Cont'd on page 4.



Dr Graham Chittleborough examines a western rock lobster in the laboratories at Perth.

New Division created

CSIRO will establish its new Division of Human Nutrition on 1 January.

The Executive has decided to reorganise its Adelaide Division of Nutritional Biochemistry to do this and since some of the staff of that Division are already engaged in research which could appropriately continue as part of the activities of the new establishment, they will form the nucleus of the new team.

Other researchers at Nutritional Biochemistry who have been working on programs which are directly related only to animal nutrition will transfer to other Divisions where this type of research will continue.

Dr A. T. Dick, who is the present Chief of Nutritional Biochemistry, will act as interim Chief of the new Division until a new person is appointed.

The decision to form the Division follows on the move announced earlier this year that CSIRO would soon formally move into some areas of medical research, particularly where it affected human nutrition.

In making the announcement, the Minister for Science, Mr W. L. Morrison, said there was no question of CSIRO abandoning its work on animal nutrition, but said it was hard to imagine any field of scientific research which could be more relevant to the health and well being of all members of the community.

Cont'd on page 3.

Norwegian visitor

Mr Robert Major, Director of the Royal Norwegian Council for Scientific and Industrial Research (NTNF) believes every country should develop a national science policy and define its national goals.

During a two week visit to Australia last month, made at the invitation of the Chairman, Dr J. R. Price, he exchanged views on science policy, research organization and administration with the Executive.

Mr Major, right, pictured with Dr Price at Head Office, also visited Divisions in Perth, Canberra, Melbourne, Sydney and Darwin and met industrialists and senior members of Government departments.

The NTNF has recently finished a two and a half year long range planning project for the development of science and technology in Norway.

It was hoped that this experience could help in future planning of Australian development.

New O-I-C plans for CILES

The best possible information service for the scientist — that's the aim of the new officer-in-charge of the Central Information, Library and Editorial Section, Mr Peter Judge.

Still at the stage of listening to other people rather than talking about his plans, Mr Judge emphasises that what he sees is 'a progressive evolution towards new services in close consultation with the users, both inside and outside CSIRO'.

Mr Judge has joined CSIRO after 11 years with the Organisation for Economic Co-operation and Development in Paris.

For his first two years in OECD he worked on the relation between economics and government science policy. He was instrumental in starting the Information Policy Group in 1965 and was responsible for its activities until joining CSIRO.

Before going to OECD he worked for five years in industry, becoming head of operational research at Tube Investments, a large group of companies manufacturing steel and other metal products. He was a former member and Chairman of the Midlands Operational Research Society.

Mr Judge has experience in the scientific field, having graduated from Cambridge University with a degree in natural sciences. He was also a research student with the Agricultural Research Council Unit of Insect Physiology.

Mr Judge feels the development of information services has reached a very exciting stage in Australia. Computer-based systems are providing easier access to vast stores of publications, selecting only those items which will interest the scientist using the system.

And, he believes, the national program for an Australian library-based information system will result in economy of effort through sharing resources.

This program is co-ordinated by the National Library in Canberra. CSIRO, together with other libraries and information services across Australia, will contribute to and benefit from this shared work, which becomes all the more important at a time of tight budgets and rapidly rising costs, he maintains.

Computer-based SDI (Selective Dissemination of Information) services, such as Chemical Abstracts Condensates and the Information Service for Physics, Electrotechnology and Control, are already being used by both CSIRO and non-CSIRO scientists. These services are being steadily improved through comments from their users.

Biological Abstracts have been added to the service and soon the Food Science and Technology Abstracts tapes will be available.

'Future services will be based on international data bases in Water Resources, Agricultural Sciences and Textiles, which require us to contribute the Australian literature in these fields,' he said.

'This international collaboration will help make Australian research more widely known and bring back dividends to us in goodwill besides cutting costs and giving us faster information.'

'Our most important assets in these services are the people who operate them. If the machines can take over some of the routine tasks, the information and library staff will have time to offer a more personal service to the scientist.'

Shah visits CSIRO

When Their Imperial Majesties, The Shahanshah Aryamehr and The Shahbanou of Iran made their State visit to Australia, CSIRO was included in the itinerary of The Shahanshah.

Accompanied by members of his entourage, the Minister in Attendance, Mr Kep Enderby, and members of the Iranian media who were travelling with him, the Shah was welcomed to Head Office by the Minister for Science, Mr W. L. Morrison, and the Chairman, Dr J. R. Price.

To give His Imperial Majesty a better understanding of the way CSIRO liaises with industry, the Central Communication Unit set up an exhibition showing various aspects of the Organization's activities.

With only 10 days notice to do this, the Unit had the complete backing of the Divisions concerned. Material was rushed through to Canberra as soon as the request was received and was organised by David Marshall who heads the design group.

It was no easy task to decide what to give the Shah as a memento of his visit but the Division of Chemical Physics came up with the perfect answer . . . a diffraction grating used in atomic absorption spectroscopy.

Which ever way the grating was turned, a whole range of colours was exquisitely separated out one from the other. To the layman, the grating, which could be used as a decorative paperweight, looked not unlike a giant-sized diamond.

Exhibits included a spectrophotometer (Division of Chemical Physics); a display of pictures showing the first chilled meat shipped to Iran in which the Division of Food Research was involved; a model house built under the Sirofab system and other building materials (Building Research); rock drilling equipment and a fibre optics display (Tribophysics); self twist spinning (Textile Industry); Interscan (Radiophysics); Sirotherm (Chemical Technology); the production of electrode carbon and carbonaceous filters (Mineral Chemistry); and solar energy (Mechanical Engineering).

Because it was known the Shah was aware that Australia has large tracts of arid land not unlike those of his own country, a request was made to the Rangelands Group of Land Resources Management at Deniliquin to supply special maps which showed Australia's rangelands and their uses.

The Shah spent 50 minutes at Head Office looking at the exhibition and discussing aspects of CSIRO with the Minister, Dr Price and other senior staff who were present.

Aid program

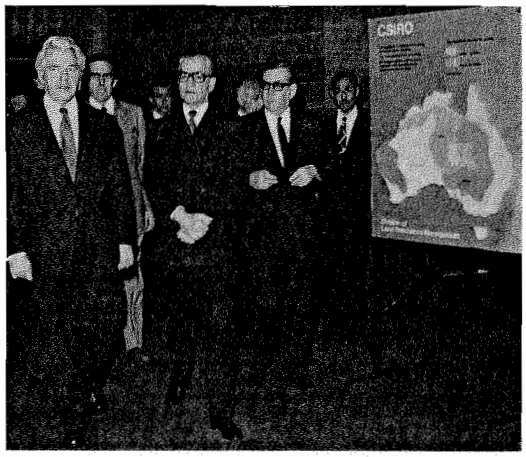
Staff members in a number of CSIRO Divisions and laboratories are enthusiastic supporters of Community Aid Abroad programs.

One of the most active is the Division of Soils in Adelaide which this year is planning to raise just on $500 for 300 m of irrigation piping for schools in the village of Shamlaji in Gujarat State in India.

More than 200 children, mostly tribal youngsters get primary and post-basic education at Adivasi Sera Samiti in the village of Shamlaji in the Sabarkantha District of Gujarat State.

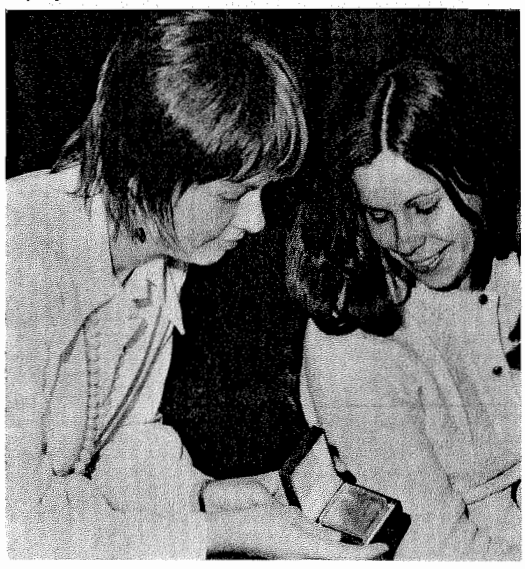
The schools had been saving for irrigation piping to complete irrigation of their eight hectares of land by selling surplus crop.

In June 1972 a cyclonic storm caused enormous damage and all the savings were needed for repair work. The schools can do the work of laying pipe but they have no money to buy it. About 200 metres are needed in seven lots of about 300 metres. The total cost of the project is estimated to be $3474.



Above: His Imperial Majesty, the Shahanshah of Iran (centre) leaves the conference room at Head Office accompanied by the Minister for Science, Mr W. L. Morrison, (left) and the Chairman, Dr J. R. Price.

Below: Wendy Parsons (left) of the Central Communication Unit and Margot Wright, Head Office receptionist, admire the diffraction grating before its presentation to His Imperial Majesty.



Division makes gift for Royalty

The Division of Chemical Physics had a second call last month on the expertise of its staff for a gift of a diffraction grating. This time it was for a presentation to Prince Charles when he came to Australia for the inauguration of the Anglo-Australian Telescope at Siding Spring on October 16.

The gift, which marked the joint undertaking of the British and Australian Governments in establishing and operating a large optical telescope in the southern hemisphere, was made to Prince Charles by the AAT Chairman, Professor Sir Fred Hoyle, and members of the Board.

The diffraction grating was put into a setting which was based on a sphere of Johnson River hardwood, representing the earth, truncated at the latitudes of London and Siding Spring in NSW. The 'earth' was supported by a disc of the material (Cervit) cored from the primary mirror of the telescope. At the latitude of Siding Spring there was a quartered diffraction grating which symbolised the way in which optical phenomena illuminates man's understanding of the universe.

A team of eight people at the Division made the gift which called for a high degree of craftsmanship and precision.

First lab assistant dies

The first laboratory assistant to join the Division of Entomology in Canberra, Mr Bill Bruce, has died.

Bill retired in 1971 as a result of ill-health. At the time he was one of the longest serving members of the staff.

His association with the Organization began in 1929 when he joined Entomology, but four years later he transferred to the Tobacco Section of Plant Industry where he was regarded with a lot of affection.

Apart from a period when he was seconded to work in a munitions factory in Sydney, Bill spent the rest of his career with CSIRO. For a short time he managed the vehicle fleet in Canberra but elected to return to Plant Industry where he remained until his retirement.

For many years he was chairman of the Technical Association in Canberra and even after he gave up that position, he remained the Division's representative on the association.

In his private life he divided his time between his interests in the Canberra Highland Society Pipe Band where he was a drummer, and the St John Ambulance Brigade.

He gave up many hours of his time to this community service and was a familiar figure around the city's sports and show grounds in his uniform.

Bill was regarded as one of the medical profession's success stories—he underwent a kidney transplant when he was 58 years of age, and although it was the reason for his retirement, his death was due to a heart condition.

He is survived by his son, Philip, who works in the Division of Entomology.

Bill Bruce was an early member of the staff of the Division of Entomology. At the time of his death the Division produced for 'Coresearch' this picture which was taken in the early 1930s.
With one or two exceptions, it shows the strength of the Division's research and technical staff (plus two typists) at Black Mountain at that time. It's interesting to note the Division now has a research and technical staff of about 200, including those in the 15 field stations based in Australia and overseas. The photo shows (from left):
Back row: W. Bruce, W. Rafferty, A. L. Tonnoir, J. W. Evans, Ms H. Deane, G. A. Currie (later Sir George) Ms Kappler, I. M. Mackerras, H. J. Willings.
Front row: Ms H. M. Barnes, Ms L. Graham, G. F. Hill, R. J. Tillyard, M. E. Fuller, W. P. Kent-Hughes.

Visit planned to China

Anyone for a trip to China? If you have the inclination — and the money — you can join an 'expedition' being organised by Doug Banks of the Editorial Services in Melbourne.

Doug hopes to have up to 30 members of staff in the party which is scheduled to leave Australia about June.

Cost for the trip will be $1150 for three weeks and this will include fares, internal travel and full accommodation for two and a half weeks in China and for bed and breakfast for two days in Hong Kong.

Chinese authorities will supply a guide and interpreter and participants will be asked to give some indication of their interests in China. Doug says the authorities will then make every effort to see that as many as possible of these will be included in the itinerary.

For your information

Information circulars

74/62	16.9.74	Technical officer/draftsman qualifications
74/70	4.9.74	Chief — Division of Mathematical Statistics (Prof. Gani takes up appointment; name of Division changed to Mathematics and Statistics)
74/71	9.9.74	Australian Numerical Meteorology Research Centre
74/72	11.9.74	French Government Professional and Technical Scholarships
74/75	13.9.74	Assistant Secretary (Works and Buildings) Head Office, Canberra (Mr J. V. Dunn)
74/77	17.9.74	Telex installation — Division of Nutritional Biochemistry, Adelaide

Policy circulars

74/31	23.8.74	Terms and Conditions of Employment— Issue of 1974 edition with minor alterations
74/38	6.9.74	Salary adjustment — accounting machinists, clerical assistants, computer operators, data processing operators, telephonists, teleprinter operators and typists and related staff
74/39	12.9.74	Salary adjustment — stores staff
74/40	12.9.74	Travelling allowance (amendments to T&C paragraphs 60 and 62)
74/41	23.9.74	Salary scales (new edition of CSIRO salary scales)

'Our appreciation of Bob Dawson is unbounded . . . without his unstinted co-operation our progress would have been much more difficult . . .': John Lee, Division of Nutritional Biochemistry.

97—and Bob Dawson is still actively looking after CSIRO interests

Until a few months ago Bob Dawson thought nothing of climbing into his utility and driving round the 140 experimental sheep on his property at Belle Vue near Robe in South Australia.

And until a short time ago he still climbed the 3m tower of the windmill on the property to check the mechanism, not to mention the enjoyment he had helping his sons make haystacks.

In the last few months, activities like these have been curtailed for Bob Dawson. He had a spell in hospital recently and since then he's been taking it quietly. Which isn't all that surprising because he is now 97 years of age and when a bloke's getting on a bit, it's reasonable to slow up a little.

Don't think, though, that Bob's sitting round growing quietly old in his armchair.

Not him. He's still a remarkably active man for his age who enjoys nothing more than a visit to the saleyards to see what's going on. Nor did he miss out voting at the last Federal elections.

Another of Bob's pleasures in life is telling people about his long association with CSIRO and the work he and the Organization have carried out at Belle Vue experimental farm.

But to understand the link between the Dawson family and the Organization, you have to go back to 1877, Bob said. That was the year his father took up land near Robe and the year that Bob was born.

Like other settlers, Bob's father thought the land around Robe looked promising. True, it was covered in rough scrub and native grasses, but cleared the cause and there was no cure or prevention.

Times were hard enough in those days, Bob said, without seeing your sheep die in front of you. There wasn't much money around, or even the promise of it.

There were some incentives, though, for holding on to the property.

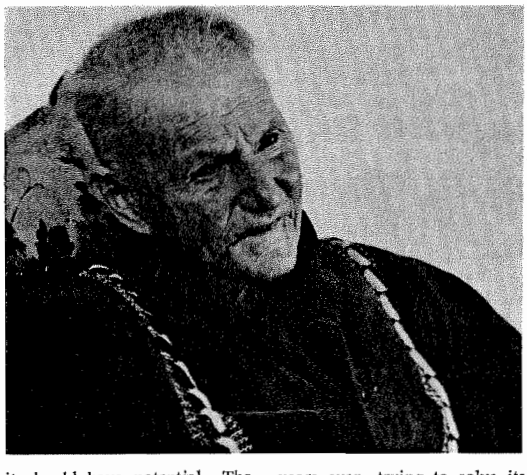
First there was the love of the land itself and secondly if there was a pretty girl you were courting, it made a lot of difference. There's still a twinkle that comes into old eyes when Anne, Bob's wife, is mentioned. He'll tell you he used to ride 40 km on horseback to see her . . . that was in the days before fast cars were around and a man hellbent on winning a woman didn't let distance worry him.

Bob Dawson married his girl, took up the family property and raised six children, three boys and three girls.

'I found the only profitable thing to do in those days was to buy inland sheep, fatten them up and sell them before they got sick and died,' he said.

The sheep were sent to local slaughter houses and when times were lean Bob and his brothers would work there as butchers. At other times Bob supplemented the family income by being the local council's road contractor.

But his real love—his real pride—lay in the land he owned. He spent hours, weeks, years even, trying to solve its problems for he was convinced that the trouble with the sheep lay with the pasture they ate.



it should have potential. The region had a good climate and a good rainfall.

To begin with, Bob's father raised horses for the export trade with India, but when this proved unprofitable he switched to sheep.

'But it didn't matter how healthy the sheep were when they came on to the property, they couldn't survive. They became listless and rickety, developed a sway back and eventually died.' Bob said.

'Coast disease'

The disease that affected the Dawson sheep proved to be a common one. Called 'coast disease', it attacked animals along the coastline of South Australia, Victoria, Tasmania and Western Australia. Other countries were faced with similar problems but no one knew

Diet

'But none of us could find the answer. Then one day I heard Dr Hedley Marston who was then head of CSIRO's Division of Animal Health Nutrition Laboratory in Adelaide talk about the problems associated with the diet of sheep.

'I wrote him a letter offering him the use of Belle Vue for any experiments he liked to carry out,' Bob said 'and I said I'd keep records for him and assist in any way that would get us the answers.'

About this time the Coast Disease Committee had been investigating the land around the area and Mr Dan Murnane, a veterinarian with the Division of Animal Health had recommended Belle Vue as being the best site on which experimental work should be based.

Scientists in other parts of the world were also working on problems which were very similar and so were CSIRO staff in other laboratories in Australia.

The Adelaide researchers concentrated their efforts on Belle Vue and finally came up with the solution . . . minute amounts of certain heavy metals, specifically cobalt and copper, they found, were essential to animal nutrition and the sheep in that area were not getting them.

Record

Up until a year ago Bob Dawson was on the staff of CSIRO as a field officer and, at 96, that made him almost certainly the oldest employee in the pay of the Australian Government or a Government statutory body. Today he still receives agistment for the use of his Belle Vue property at Robe in South Australia.

A lot of work still had to be done to find the best ways to provide the sheep with the correct amount of these metals, and in the case of cobalt, it was found that the best way to supply it was in a pelletised form while copper could be added to the fertiliser for the pasture.

None of this research was achieved in five minutes. It has extended over many years and in fact, is still continuing at the Division of Nutritional Biochemistry in Adelaide, as the laboratory later became named, where scientists are also interested in the related human disease of pernicious anaemia.

Second generation

The Division continues to use Belle Vue as an experimental farm for its work, and while Bob Dawson retains an active interest in what is happening, it's his son, Vic, who is now in charge of the operations.

Although the liaison between CSIRO and the Dawsons began informally, it was not long before it was put on an official basis. Belle Vue was designated a CSIRO experimental farm and Bob was made a field officer.

Bob remembers all too well the bad old days and recalls the recession when he had to quit his sheep for sixpence a head because there was nothing better to do with them, but he talks with a special warmth in his voice about his long association with CSIRO.

He acknowledges that overcoming the cobalt deficiency was the turning point for his farm and his family, and he has grown old content with the knowledge that he saw the day when his wool was worth $4 a kilogram.

He knows, too, that the land around Robe, far from being useless country, is now worth anything up to $200 a hectare.

Until his recent bout of ill-health he insisted on living at his century-old homestead on Belle Vue. His wife died some years ago but even at 97, Bob has coped with living on his own, although a devoted family is always close at hand.

At the moment he is living with his daughter, Ms Sue Wright in Robe, but he is determined to return to his farm just as soon as he has recovered.

He concedes he mightn't be able to make haystacks any more and he doesn't think he'll drive the 'ute' again (he held a special licence until he was 95), but there's nothing to stop him going to the saleyards and meeting his old friends or attending field days on the property.

And more than anything else, he says, he wants to keep in touch with what his special colleagues at the Division are doing.

As for those special colleagues—well, John Lee of the Division of Nutritional Biochemistry who has worked with Bob for nearly 40 years, says:

'Our appreciation of Bob Dawson and our affection for him is unbounded. Without his unstinted co-operation our progress would have been much more difficult.

'We especially remember his appreciation of Dr David Riceman's work which led to the discovery that the application of copper to Robe's unpromising soils made the adequate production of pasture legumes and cereal crops possible, and his refusal to take advantage of this discovery lest the improvement made the pastures unsuitable for our work'.

'We all recalled his joy when he topped the local market in 1939 for the first healthy lamb crop he ever produced at Belle Vue,' John said, 'and no one was more delighted than us when his contribution to research, to agriculture and the community was rewarded by the award of an MBE.'

There's a far-away look in old eyes when Bob Dawson starts talking about the old days at Robe.

This early photograph of Bob Dawson hangs on the wall at his century-old homestead and shows him as older colleagues in CSIRO will remember him.

New Division

Cont'd from page 1.

'I am told that no comprehensive dietary surveys have been carried out in Australia for more than 30 years,' he said.

'At present consumers in Australia have precious little protection against nutritionally inferior food products.

'The Australian Government has a clear responsibility to protect the Australian people.

'I have been strongly advocating that CSIRO conduct more consumer-oriented research and the decision to establish the new Division represents a major new step in that direction.'

Australia's food laws were concerned with ensuring safe levels of potentially harmful substances, but took virtually no account of the nutritional value of foods, Mr Morrison said.

'I hope that the program of the new Division will lay the groundwork for the formulation of nutritional standards of food,' he added.

'I understand that medical schools would appreciate more information to improve their formal teaching of nutrition and I anticipate that the new Division will also be able to make a contribution in this regard.'

Mr Morrison said that there was a general feeling in Australia that nutritional problems existed almost only among the poor or by those who had heart disease.

'But research in other countries with similar living habits strongly indicates that such an assumption is not only unwarranted but could prove fatal.'

LETTERS

I would like to register a strong protest about the insidious trend that has developed in recent issues of 'Coresearch'.

Issue 184 included letters which suggest that our house journal is to become a stamping ground for female liberationists such as J. F. Michaelides and male liberationists such as C. H. Bagot.

It may have been an editorial decision to publish these letters to suggest that both points of view are presented but with respect, I would like to point out that there always will be a difference (often a little difficult to detect) between the two sexes and that 'Coresearch' is not the journal to advocate the merits of either group.

M. H. Jones (male),
Mineral Chemistry,
Port Melbourne.

'Coresearch' takes the view that staff members should be able to express their views on any subject of interest to the Organization and those who work for it, providing those views are not libellous. With equal respect, the editor is already aware that there is a difference between the sexes.—Ed.

★ ★ ★

Award

The acting Officer-in-Charge of the Australian Numerical Meteorology Research Centre in Melbourne, Mr D. J. Gauntlett, has been awarded the degree of Doctor of Philosophy for his thesis entitled 'The Application of numerical models to the problems of meteorological analysis and prognosis over the southern hemisphere'.

Seminars popular

Talks by senior staff from Head Office are being incorporated in a program of seminars being organised by the Division of Land Use Research for its members.

The aim of the exercise is to promote meetings between senior administrative and scientific staff, to hear why the 'system' is as it is, and to discuss what might be needed from the system in the future.

One talk was given by the Manager of the Central Communication Unit, Mr George Williams, about the interface between CSIRO and society.

Another, given by members of the Finance and Properties Section, centred on the relationship between auditing requirements and research efficiency.

The organisers of the seminars have been encouraged by the Division's response to the meetings.

STAFF SURVEY TAKEN FOR NEW IN-HOUSE JOURNAL

By Clive Hackett

Towards the end of 1973, a year which saw much discussion in CSIRO about 'communication', I submitted a proposal to the Executive, suggesting the establishment of a new in-house journal for CSIRO.

The thought was that such a journal might promote the circulation of ideas and opinion about new research proposals, methods of management, and the problem of adjusting to the changing needs of society.

The Executive postponed making any decision on this proposal until it had been established whether the staff wanted such a journal and whether they would write for it.

After consultation with the Manager of the Central Communication Unit, Mr George Williams, it was decided that it would be worth surveying the staff to try to determine attitudes on these questions. And since there had already been some thought of encouraging staff to use 'Coresearch' more as a medium for debate, a broad framework for the survey was chosen.

Approval was obtained from the Executive to distribute an explanatory letter and questionnaire to all staff in six Divisions — Building Research, Chemical Engineering, Land Resources Management, Nutritional Biochemistry, Radiophysics and Wildlife Research. These Divisions were considered to be geographically and disciplinarily representative.

The total number of staff involved was about 850, about 13 per cent of the staff of CSIRO. With one exception, Divisions in which I was personally known were not included.

Although assistance in various forms was provided by Head Office, the approach to the staff was direct from me, and the questionnaires were returned directly to me for analysis and disposal. The results have now been analysed.

Analysis

The number of replies received was 69-53 from the 'RS/EO/SSO/other professional' category, 12 from technical staff, and four from clerical staff.

This roughly represents a response level from the 69 of 15.5, 3.7 and 4.7 per cent from the three groups respectively.

The Table shows the questions asked and numerically summarises the replies received. The sum of the replies to individual questions rarely agrees with what one might expect because many respondents decided to answer questions which the flow-chart form of questioning was diverting them past.

A further complication arose because several respondents were disturbed by the use of the word 'serious' in question 1, but most of these pressed on after stating that the adjective seemed too strong. (Some word was necessary because any large organisation will have some communication difficulties).

Dissatisfaction was expressed also about question 2, which might have been better expressed as 'Do you think the difficulties are almost unavoidable in an organization as diverse and far-flung as CSIRO?

Communication

Despite these problems, it was clear that most of those who chose to reply were worried about the difficulties of communally discussing research proposals, research policy and management principles.

However, there was no firm conviction that the in-house journal would help solve these difficulties. Many scribbled in the note 'We have too much to read already'.

Most respondents did feel though that 'Coresearch' could be developed to facilitate discussion within the Organization, but they implied, too, that they would feel more confident about contributing if the management of 'Coresearch' was seen to be more independent of the management of CSIRO.

As for the open-ended questions, 52 of the respondents made an entry under item 10 and/or 12.

About 12 respondents qualified their rejection of the in-house journal proposal by saying specifically that 'Coresearch' should be used more imaginatively to spread information within CSIRO about Divisional research activities. The sense of the remarks was that the reports should be written specifically for the staff, not as publicity material for outsiders.

There were many other specific suggestions. Among them were:

- promotion of personal contact between members of Divisions, through visiting, forum discussions, open days, and the holding of annual meetings of delegates from Divisions to discuss policy and research.
- appointment of a skilled touring lecturer to collect and disseminate information.
- motivation of staff mobility and exchange.
- increase in the number of inter-Divisional research programs.
- circulation of brief reports of Divisional research activities at six-monthly intervals.
- improvement of communication within Divisions through increasing contact between Chiefs and Divisional staff.
- direct arguing of research proposals betwen Chiefs and advisory staff groups before submission to the Executive.
- replacement of Chiefs by Divisional Executive Committees composed of senior research staff.
- more personal contact between Divisional staff and (a) the Executive and (b) senior administrative staff.
- more written communication between the Executive and the staff about CSIRO and government policies.
- stimulation of greater interest among administrative and clerical staff in the research work of the Organization.
- more direct involvement of the Minister for Science and members of industry in discussion of the aims and methods of CSIRO.
- bolder reaction by staff when problems of communication become apparent.

* * * *

Results of survey

	Yes	Perhaps	No
1. Do you believe there are serious difficulties in CSIRO over discussion of new research proposals, existing research policy, or the principles upon which CSIRO is operating? Yes/no. If 'yes', go to 2. If 'no', go to 11.	51	2	16
2. Do you think these difficulties could be substantially reduced by the use of appropriate methods? Yes/no. If 'yes', go to 3. If 'no', go to 11.	51	1	2
3. Do you think that the establishment of an in-house journal as described would significantly reduce the difficulties you are aware of? Yes/no. If 'yes', go to 4. If 'no', go to 8.	16	4	24
4. In your opinion, would this reduction be worth having when set against the time people might use to prepare articles and correspondence? Yes/no. If 'yes', go to 5. If 'no', go to 8.	20	3	4
5. If the journal were established, do you think it would harm the staff association journals by drawing material from them (remembering that only the more philosophical articles about terms of employment would be accepted)? Yes/no. Continue to 6.	3	1	21
6. If the journal were established, would you really be likely to contribute articles or correspondence occasionally? Yes/no. Continue to 7.	16	2	13
7. If the journal were established, would you be willing to nominate for the Board of Management, assuming that the tasks would be refereeing of articles and meeting annually to discuss editorial policy? Yes/no. Continue to 8.	15	—	16
8. Do you think 'Coresearch' could usefully be expanded to carry more ideas and debate as an alternative to creating a new Journal? Yes/no. If 'yes', go to 9. If 'no', go to 10.	39	—	17
9. Would you have more faith in the potential of 'Coresearch' as a medium for discussion if it were seen to be more independent of the CSIRO administrative system? Yes/no. Continue to 10.	24	1	11

The remaining sections of the questionnaire said:

10. What other methods do you have in mind for helping to circulate ideas and opinion in CSIRO? Continue to 11.

11. Please indicate the category to staff to which you belong—

12. Please put any other comments here:

Because it is my aim here to present an objective report on the survey, I do not think I should comment on the results and recommendations other than to say that the in-house journal proposal should not be proceeded with but that the development of 'Coresearch' seems strongly desirable.

I hope that readers will send to 'Coresearch' their own views on the results and suggestions and also on the meaning of the silence of 90 per cent of the sample.

I thank the Executive and Chiefs of Divisions for enabling this survey to be carried out, and I thank George Williams and his staff for their encouragement and assistance.

I am also very grateful to those people who replied to the questionnaire, in particular those who wrote at length and those who entrusted me with their names. The 69 respondents may be pleased to know that the survey is likely to be discussed at the meeting of the 'Coresearch' Advisory Committee this month and at the Staff Relations Seminar in December.

Seconded

Dr F. A. Blakey, Assistant Chief of the Division of Building Research at Highett, has been seconded to the Department of Housing and Construction as First Assistant Secretary (Building Technology and Sociology).

He will have the responsibility for the Experimental Building Station, the Central Building Data Service, the Housing Research Branch and a Sociology Unit yet to be established.

Dr Blakey was appointed Assistant Chief of the Division in 1968 and has been Acting Chief on a number of occasions.

'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.

Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478 or Wendy Parsons, 48 4227.

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Rock lobster

Cont'd from page 1.

The information, which will then be transmitted back to Australia, will give the position of the buoys at regular intervals for several months. As these are plotted, a clear picture of the currents should be available, and Graham and the other scientists engaged on the lobster project will take advantage of the data supplied.

Working with Graham on the larval stages are two other scientists, Bruce Phillips and David Rimmer. Settlement of final stage larvae and development of early post-larvae is being studied by Bruce, then Graham comes back into the picture at their next stage of development, the juveniles aged two to five years.

His work includes studying the ecology of the coastal reefs on which the juveniles dwell.

During their juvenile period, the rock lobsters moult several times a year, gaining in size each time. A study of this moulting and the physiology of rock lobsters is the work of Bill Dall, who also has the responsibility for overall leadership of all crustacean work of the Division.

The lobsters' behavioural patterns are the concern of Phil Hindley, another member of the team. Phil applies time-lapse photography using infra-red film to record competition for food during nocturnal feeding.

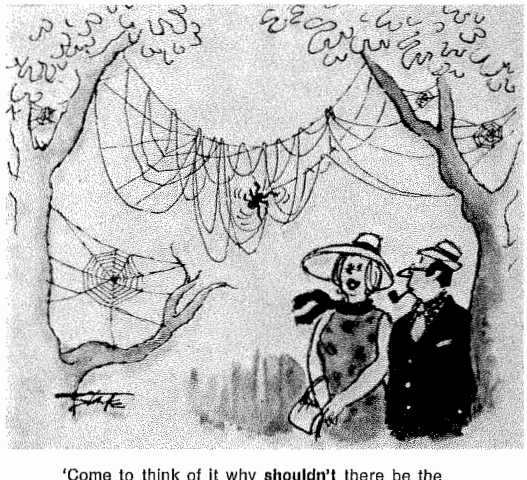
'We hope our intensified efforts are going to give us a lot of the answers to questions we're all asking about the fishery,' Graham said.

'There's been growing concern by the industry and the State over the high level of exploitation and the possibility of there being insufficient breeding stock left to maintain sufficient recruitment to the adult population.

'Our results so far indicate that there are still high levels of larvae settling in the centre of the population near Dongara and Geraldton, but towards the edges, such as around Fremantle, there hasn't been a good crop of youngsters since the peak settlement of 1964-65.

'This might just be part of a long-term cycle of variations in water circulation,' he said, 'but we can't overlook the possibility of it being linked with ecological changes in the coastal waters of this area.

'Changes in land use near the coast with the rapid development of large industrial and urban centres may be having an effect, but we just don't have enough information yet to make any definite statements.'



'Come to think of it why **shouldn't** there be the occasional case of bungling incompetence?'

—Courtesy Punch

coresearch 187

Produced by the Central Communication Unit for circulation among members of CSIRO staff

December 1974

Hobart meeting was CSIRO 'first'

CSIRO Advisory Council and Members of the State Committee last month met in Hobart to take a good look at current developments in Tasmania.

The meeting created two firsts.

It was the first time the Advisory Council had held one of its meetings in Tasmania and the first time both the Council and a State Committee had held a joint meeting of that particular kind together.

Local speakers gave their mainland visitors an overall picture of the State, its present economic situation and the difficulties they foresaw for the future.

Leading the team from the Hobart laboratory was the Officer-in-Charge, Dr Don Martin, who outlined the history of 'Stowell', the historic building CSIRO occupies in Hobart, and the type of programs which had been undertaken over the years by the various Divisions.

He also spoke on the work of his own group from the Division of Horticultural Research—it was transferred from Plant Industry about four years ago—and explained the way the staff was co-operating with the Department of Agriculture, particularly where it came to the apple industry.

Much importance was attached to research into the post-harvest condition of the fruit while more attention was also being placed on the processing of the apples, particularly into juice.

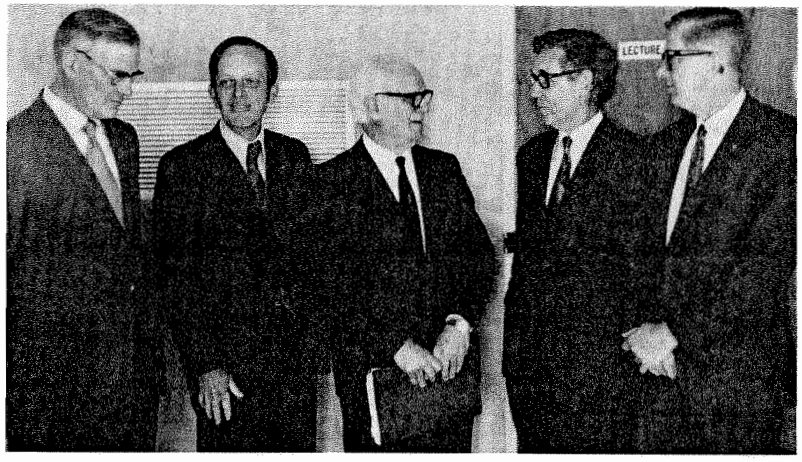
Another area being developed was grape growing for wine production and vine physiology, he said, was taking on new significance in Tasmania.

A comprehensive picture of the fish products research being done by the Tasmanian Unit of the Division of Food Research was given by Dr June Olley who has just returned from an extensive overseas tour.

Mr Keith Taylor of the Division of Entomology discussed the work of his group and the success they have had in controlling the Sirex wasp. He added that he hoped it might soon be possible to look at predators of eucalypts.

Other staff members who spoke were Mr K. D. Nicholls, Division of Soils, and Dr David Ratkowsky, who described the role of the statistician at 'Stowell'.

So that the visitors could have a wider understanding of Tasmania when research programs were being considered, two prominent personalities, Mr Roy Fagan, the former Tasmanian Minister for Indutrial Development, and Professor P. Scott, the Pro-Vice-Chancellor and Head of the University of Tasmania's Geography Department, both gave addresses in which they spoke on the historical, geographic and economic growth of the State.



Participants at the joint meeting in Tasmania taking time out for some informal discussion included (from left) Dr D. Martin, Officer-in-Charge of Tasmanian Regional Laboratory; Prof G. C. Wade; Mr V. G. Burley, Chairman of State Committee; Mr J. P. Shelton, Head Office, Canberra, and Mr D. Sugden, consultant engineer.

Welcoming the participants to the meeting, the Chairman, Dr J. R. Price, said that CSIRO's research was not a regional activity.

It transcended State boundaries and it was hoped that what was done in Tasmania would prove useful to other places in Australia. Similarly, projects undertaken on the mainland might well prove to be advantageous to the southern State.

Following the joint meeting, the Advisory Council continued its own session when subjects related to CSIRO's Australia-wide activities were reviewed.

A meeting of the Executive was also held in Hobart.

At the end of the program mainland visitors who were able to stay on for an extra day were taken on a visit to see the Gordon River Power Development Scheme in the State's rugged south-west country where they were able to assess for themselves some of the effects the $100 million project would have on the region.

Farewell to O-I-C

Mr M. D. Murray (left), the newly appointed Officer-in-Charge of the McMaster Laboratory, made a presentation to Dr D. F. Stewart, who has retired after being Officer-in-Charge of the laboratory since 1954, at a laboratory function recently.
Dr Stewart, who has had a distinguished career, joined CSIRO in 1946.
The expansion of the facilities in the McMaster Laboratory, the building of the Ian McMaster wing and the Annex, and the development of the McMaster Farm at Badgery's Creek all took place under his guidance.
Dr Stewart played a significant role in the formation of National Policies for Disease Control, being the Chairman of the Committee which drafted the plans for the eradication of tuberculosis and brucellosis.
His services to the Australian Veterinary Association were considerable and were recognised by his being elected President in 1955-56 and Fellow in 1958.
His retirement was marked by functions at the laboratories of the Division of Animal Health and a public dinner.

Government to form ASTEC

The Federal Government plans to establish an Australian Science and Technology Council (ASTEC) by the end of this year.

Its main function will be to advise the Government on the role of science and technology in the formulation and realisation of national objectives.

In announcing the decision to establish ASTEC, the Minister for Science, Mr Bill Morrison, said it would report regularly to the Government and, except for classified comments on defence science, its reports would be made public.

'In this way, the Council will be reporting to the community at large, and I hope it will get a meaningful feedback from the public,' he said.

'The time when the directions of scientific research and the priorities of science could be left entirely in the hands of scientists is past. These are now issues on which the community must have its say.'

The council would have 12 members and membership would not be dominated by scientists.

Future policy

'ASTEC will be a body of people with the knowledge and imagination to help chart the future direction of Australian science policy,' he said.

'It will give us a framework for planning, so we can then decide what particular projects should be supported.'

Mr Morrison prefaced his announcement—made when opening the Australian Academy of Science's forum on Science and Society in Australia at Melbourne University last month—by saying that 'science is too important to be left only to scientists.

'Equally, government is too important to be left only to politicians,' he said. 'What we are seeking is a partnership between scientists, government and the community.'

Mr Morrison called on scientists to make a more active contribution outside their own 'narrow disciplines'.

'It's time for scientists to alter their horizons, to realise that in between the telescope and the microscope is something called man, and it is the duty of science to make a better life for him,' he said.

'Science too important to be left only to scientists'

The decision to establish ASTEC follows the Government's invitation to interested groups earlier this year to submit views on the desirable composition and functions of an Australian Science Council.

OECD report

The establishment of a central mechanism to consider science policy has also occupied the attention of the Organization for Economic Co-operation and Development examining panel which has reviewed science and technology in Australia at the invitation of the Government.

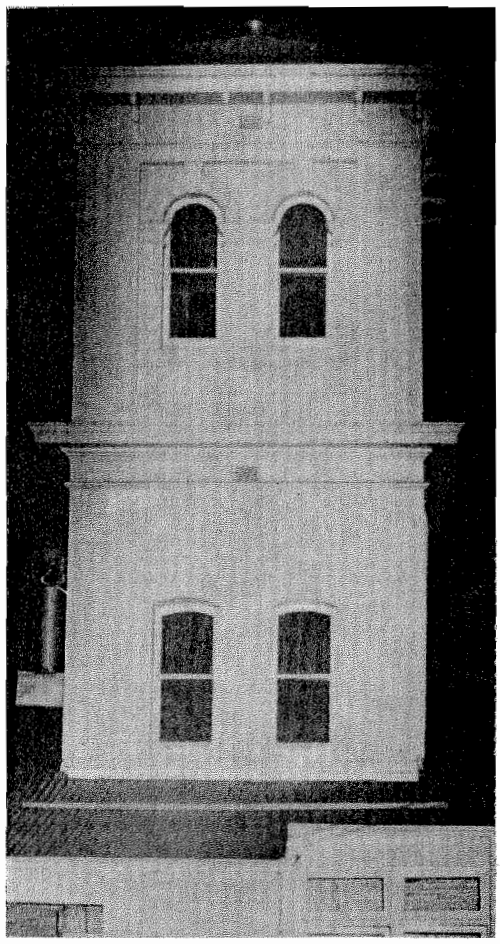
In a report published in September, the three-man OECD panel said that one approach which had worked well in a number of countries was to create a committee of those Ministers whose departments have major scientific activities responsible directly to the Prime Minister.

This ministerial committee would formulate governmental objective regarding the broad priorities of research and development, make decisions on

Cont'd on page 4

Stowell's ghost one of the family

LADY IN GREY KEEPS BURGLARS AWAY TOO!



Stowell's tower bathed in the cold moonlight.

JUST to keep the records straight . . . CSIRO is not entering the field of psychic research.

'Coresearch' was looking over the Organization's Tasmanian operations starting with the main laboratory, 'Stowell', in Hobart's historic Battery Point.

One assignment was to check out the well-known legend of the ghost of Stowell, the grounds being that anything that might affect staff morale is important to 'Coresearch'.

Legend has it that the spectre, the ghost of a young girl called Amy who met her untimely death with a fall (or was she pushed?) from Stowell's tower about 125 years ago, is still occasionally seen around the corridors.

Officer-in-charge of the laboratory, Dr Don Martin, has twice had a visit from her.

'I was startled, but not exactly surprised,' Don told 'Coresearch.'

'I used to work back a lot at night and my room in those days was the place where she was allegedly murdered. She"s not supposed to like men and perhaps she resented my presence there.

'I knew that she was a frequent visitor to the matron of the hospital when Stowell was used for that purpose in the time between the two World Wars. She was also seen occasionally by one of our former librarians and I always felt it was just a matter of time before I too, would see her.

'On both occasions when she materialised for me she was wearing a grey crinoline gown, hooped at the bottom, with leg-of-mutton sleeves. I never saw her face. That was all filmy, misty.

'She simply appeared and then dissolved away,' Don said.

One story about Amy's death has been recorded in a play by Hal Porter called 'The Tower'.

In this, Amy was the step-daughter of an ambitious and ruthless early settler who lived the life of elegance in the stately home of Stowell.

Amy upset her stepfather's plans to marry her to a socially acceptable young man when she announced that she already had a lover, an assigned servant and former convict. Moreover she was expecting his child.

The stepfather was overcome with horror at the disgrace this would bring upon his family name—never mind Amy—and on the night of the announcement murdered her, pushing her over the balcony.

The second story about her death says that it was the servant who murdered her.

To date Amy herself has not revealed who-dun-it but male chauvinists on the Stowell staff claim she has her revenge on the male sex by making sure that most babies born to them are girls, not boys.

Don Martin says the place actually has a second ghost. There have been times when he's back late at night and he has heard very definite footsteps on the ground floor passage.

'They've nothing to do with Amy,' he said. 'She's only been seen on the top floor. But I've gone downstairs many a time to see who was there only to find the place absolutely empty . . . of humans anyway.'

Don admits — with a twinkle in his eye — that he never discourages the legend of the Grey Lady.

'In the nearly 30 years CSIRO has occupied Stowell, we've never had a case of burglary or vandalism.'

Tall tales no worry to couple

Home for two members of CSIRO's Tasmanian staff after their marriage on 7 December will be in the converted flat above the old garage at the Stowell laboratory.

The young couple, Rosanne Waller, who works on the laboratory's administrative staff, and Stephen Thrower, a scientist with the Division of Food Research's Tasmanian Unit, have no fears about sharing their married life with the Ghost of Stowell.

Both accept the legend of the Grey Lady and although Stephen, who also acts as caretaker, admits it's a bit off-putting to have to keep shutting up the doors she allegedly unlocks and turning off lights after her, they both feel she will add something to the excitement of living in such an atmosphere.

During office hours Steve is well content to get on with his scientific work which has largely been centred around the investigation of heavy metals in oysters. He is also particularly interested in quality control of frozen seafoods and sees a great future for the export of jet-fresh seafood to Asia and elsewhere if transport problems can be overcome.

But after hours he and Rosanne have spent a lot of their spare time renovating the old flat. In doing so, they have added to its old-world charm.

New papers now cover the walls but behind them you can still see the outline of secret panels and doors.

Stowell is one of the oldest buildings CSIRO owns. It was originally built in 1831 by Captain Montagu, a member of Colonel Arthur's administration in early Hobart Town, and completed in 1834.

Rosanne Waller with her fiance, Stephen Thrower.

INTREPID HAUNTERS OF THE NIGHT

(By Amy, Coresearch's special spectre correspondent)

It was really quite eerie . . .

I was putting the finishing touches to my petit-point before beginning my rounds, when this unholy din shattered the peace of Stowell.

I mean to say, what would you think if your privacy was invaded by four mortals stumbling around your home in pitch darkness, uttering hoarse cries of 'Amy, where are you?' and 'If she appears I'll faint!'

Actually, the lady folk were no trouble. One could sense their gentility and decorum. But those two men . . . really!

I knew one of them by sight — he often follows me on my rounds testing door latches and checking that those funny machines are turned off. A nice young gentleman. But somehow he was different that night.

Perhaps it was the influence of that other ticket-of-leave fellow — the one with the tin-type apparatus that he said took pictures, and the black box that captures sounds. Came from Canberra, he said.

'I don't think it was such a good idea coming here,' he kept muttering. 'I get scared in the daylight, let alone at midnight.'

They clung together (the men, I mean) and let the ladies lead the way. Hardly chivalrous behaviour. One could take a nasty fall climbing around Stowell's tower — and let me tell you, I speak from personal experience.

'This is the door which keeps mysteriously unlocking,' the young gentleman was saying. They were on the second floor.

'It has two bolt locks — top and bottom — a standard knob, and a key lock. You can lock the door as carefully as you please, and two hours later when you try it, the thing is unlocked.'

In the gloom I could see the visage of the other fellow begin to glow a ghastly green.

'And around this corridor here is where she appears most often.'

It was the young gentleman's lady speaking in uncompromising tones.

The whimpering sound I heard was inexpertly disguised by a high pitched giggle-cum-cough. Really, that other man! If he was so sick, he should not be out in the middle of the night.

He could catch his death . . .

They shuffled their way into the old storeroom leading to my tower.

'You lead on . . . no, you go first . . . no, I insist, after you.'

The ladies led the way, clambering up the shelves of the floor-to-ceiling wall rack to the manhole which had been installed after some silly man had removed the lower flight of access stairs. As though that would stop me.

'Why on earth did you bring a (eatowel?'

It was the other lady whispering. That strange fellow was crouching in the corner on the

Cont'd on page 4

$110 million Budget for 1974-1975

The 1974-75 Budget brought down by the Government provides a total amount of $110,462,100 for CSIRO's annual and capital expenditure, of which $94,050,000 will be provided directly by the Government, $12,675,000 by Rural Industry Committees and $3,736,600 by various other contributors.

Treasury funds

Of the amount of $94,050,000 from Treasury Appropriation, $81,090,000 will be for salaries and general running expenses, $11,860,000 for capital expenditure and $1,100,000 for repairs to buildings.

The allocation for salaries and general running expenses represents an increase of $11,587,000 over the actual expenditure for 1973-74.

This increase will cater for the following requirements:

- Increments, reclassifications, loading on recreation leave and salary adjustments arising from arbitration determinations are expected to absorb $7,717,000.
- The planned development of new and high priority projects will absorb $1,241,000. The more important of the activities in this category are:
  - Population genetics of beef cattle
  - Sheep infertility in Western Australia
  - Biological control of dung and weeds
  - Storage of grain
  - Marsupial physiology
  - Tropical grain crops
  - Evaluation of vertebrate fish resources
  - Characteristics of marine coastal environment
  - Forest land use and resources
  - Plant proteins
  - Built environment
  - Solar energy utilisation
- Increased cost of goods and services due to price rises in the past year, additional postal and telephone charges, service costs for new accommodation, including cleaning, lighting and telephones, and additional support for current research programs including computing, mathematics and statistics, research services and administration, will absorb $2,117,000.
- An amount of $512,000 has been set aside to meet increased grants to such bodies as the Standards Association of Australia, the National Association of Testing Authorities and Research Associations.

The capital allocation from Treasury sources is divided into three categories: works under the control of CSIRO, those controlled by the Department of Housing and Construction and those handled by the Department of Services and Property.

The first group of items total $2,480,000. This will be spent on developmental work at field stations $500,000; the purchase of major items of laboratory equipment $1,150,000; the Cyber 76 computer $750,000; preliminary expenses associated with the planning and design of a fisheries research vessel $80,000.

The second category includes $9,000,000 which provides for building projects under the control of the Department of Housing and Construction. $7,380,000 will be needed for buildings under construction at the end of 1973-74 while the remaining $1,620,000 will meet the costs during 1974-75 of new works to be started in the current year.

Those items costing more than $100,000 included in the 1974-75 New Works Program are:

Provision of chiller refrigeration for Division of Food Research, North Ryde, $150,000; a prototype animal health laboratory for the Division of Animal Health, Maribyrnong, $375,000; a laboratory for the Division of Mechanical Engineering, Highett, $160,000; poultry unit and quarantine facilities for the Division of Animal Health, Maribyrnong, $557,000; provision of insect proofing for large animals for the Division of Animal Health, Indooroopilly, $720,000.

The erection of: a laboratory building for Division of Fisheries and Oceanography, Cronulla, $179,000; a fisheries research laboratory for Division of Fisheries and Oceanography, Cleveland Point, Qld., $1,070,000; a fisheries research laboratory for Division of Fisheries and Oceanography, Marmian, W.A., $851,000; a computer building for Division of Computing Research, Black Mountain, $1,043,000.

The acquisitions proposals which are handled by the Department of Services and Property include land at Watermans Bay for the Division of Fisheries and Oceanography, $135,000; two houses at Narrabri for the Division of Radiophysics, $50,000; and a caretaker's cottage at Highett for the Division of Building Research, $35,000.

Other funds

The joint Commonwealth-Rural Industry funds provide a large part of the finance available to CSIRO from non-Treasury sources. In 1974-75 the total will be $12,675,500, most of which will be utilised for wool and meat research.

The various Rural Industry funds and the amounts that they will provide are:

Wool Research Trust Fund, $9,449,000; Meat Research Trust Account, $2,161,800; Wheat Research Trust Account, $211,700; Dairy Produce Research Trust Account, $247,900; Tobacco Industry Trust Account, $293,000; Fishing Industry Research Trust Account, $226,600; Dried Fruits Research Trust Accounts, $51,900; Chicken Meat Research Trust Account, $6,500; Pig Industry Research Trust Account, $12,100; Poultry Industry Trust Fund, $15,000.

Only a small proportion ($397,900) of these funds relates to capital items. The remainder $12,277,600 will cater for salaries and general running expenses for current programs of agricultural research except in the case of Dried Fruits, Fishing and Pig Industries where funds have been provided for five new projects.

Other expenditure from grants and donations from commercial enterprises and Government Departments will amount to $3,736,600. This will cover a wide range of collaborative projects involving most of the Divisions.

Summary of Estimates and Expenditure for 1974-75

	Estimates	Expenditure	Increase or Decrease
Under CSIRO control:	$	$	$
Salaries and general running expenses	81,090,000	69,502,677	11,587,323
Buildings, works, plant and development items	2,480,000	5,477,780	−2,997,780
Total under Direct Control of CSIRO	83,570,000	74,980,457	8,589,543
Under Department of Services and Property control:			
Acquisition of sites and buildings	220,000	799,434	−579,434
Under Department of Housing and Construction control:			
Buildings and Works	9,000,000	4,952,243	4,047,757
Furniture and fittings	160,000	156,269	3,731
Repairs and maintenance of buildings	1,100,000	885,933	214,067
Total CSIRO — Treasury funds	94,050,000	81,774,336	12,275,664
Contributory Funds:			
Salaries and general running expenses	15,243,400	14,171,485	1,071,915
Buildings, works, plant and development items	1,168,700	643,170	525,530
Total Funds CSIRO — All Sources	110,462,100	96,588,991	13,873,109

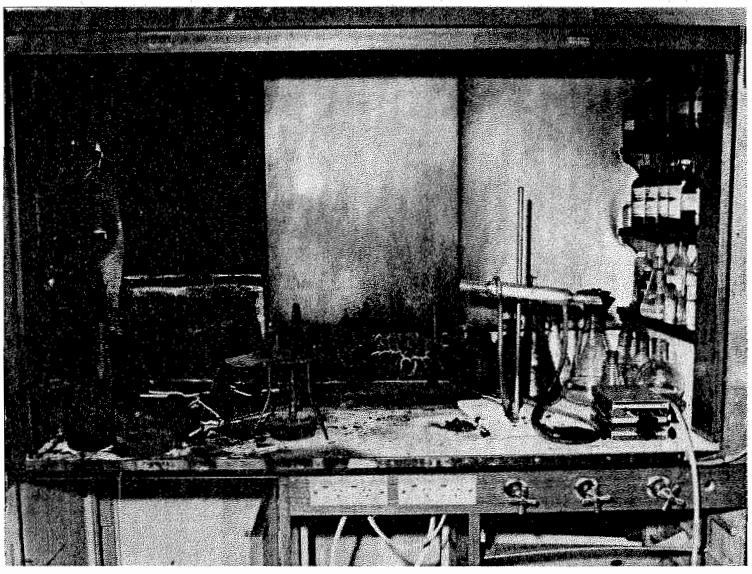
For your information

Information circulars

74/84	7.10.74	CSIRO post graduate studentships 1975.
74/85	4.10.74	Long Pocket Laboratories, Indooroopilly, Qld.
74/86	8.10.74	Change of telephone number. Division of Tribophysics, Parkville.
74/87	14.10.74	Acting Chief, Division of Entomology. Acting Officer-in-Charge, Dairy Research Laboratory.
74/88	15.10.74	Chief, Division of Mathematics and Statistics.
74/89	16.10.74	Royal Society of New South Wales — Walter Burfitt Prize.
74/90	21.10.74	Christmas-New Year Holidays 1974-75.
74/91	28.10.74	Swiss Government Scholarships 1975-76.
74/92	29.10.74	Division of Human Nutrition.
74/93	31.10.74	Kimberley Research Station — Acting Officer-in-Charge.

Policy circulars

74/45	3.10.74	Advances against travelling allowance — Visits within Australia.
74/46	10.10.74	Sale and distribution of CSIRO publications.
74/47	25.10.74	Living away from home allowance; Canberra boarding allowance.
74/48	30.10.74	Salary adjustment — technical officers and draftsmen.
74/49	30.10.74	Salary adjustment — printing tradesmen.
74/50	30.10.74	Salary adjustment — animal attendants, assistants — road service, assistants — lab. service, cafeteria supervisors, caretakers in residence, cleaners, farm assistants, gardeners, housekeepers, housemaids, labourers, lift attendants, caretakers in residence — supervisory allowance.
74/51	31.10.74	Salary adjustment — architects.



How to live dangerously in CSIRO

To create the chaos shown in the photograph above you will need the following chain of circumstances:

- Flammable liquid in a glass vessel over a gas burner.
- Assortment of hazardous chemicals stored in, and under, the fume cupboard (e.g. there are four 500 ml bottles of carbon disulphide on the right hand side shelves).
- A small flammable liquid fire at the back of the cupboard and some indecision about how to put it out.
- An explosive concentration of flammable vapours in voids under the fume cupboards ignites, expelling and breaking some of the containers stored there.
- The fume produced restricts the efforts of the fire fighters.

Does anyone know where the scene is set for a repeat performance?

Gil Barnes,
Safety Officer.

How about that!
Textile Physics is twice blessed

Royalty stopped by the Division of Textile Physics in Sydney recently — or so they'd have us think.

Some in-depth investigative journalism on the part of 'Coresearch' however, revealed that the couple below were really Joan Davies and Bob Haly and it was part of the Division's 1974 Revue.

The revue was staged 'for the hellofit'. No charities, no reason, just for a night of good clean fun.

It's something they turn on at Textile Physics, 'Coresearch' learned, after they've forgotten the drama and trauma of the last one, a period that usually means about a three-year time lapse.

Bob Haly was the producer for 1974, the compere was Ian Watt and incidental and other music was in the hands of John Bristow and his organ.

The revue was enjoyed by a capacity audience of Division members and families, former members who know what such revues are like and who come back for more, and friends.

'Father' Kevin Shiel (right) looked the part as he sang 'Bless This House', but the version wasn't one he learned at Sunday School.

ASTEC to be formed

Cont'd from page 1

major new proposals for research and development and consider the national science budget.

On all matters of detail, it would be assisted by an Advisory Council for Scientific and Technological Policy, which would prepare the work of the Ministers and work out the details of the national science policy in consultation with appropriate experts.

The panel believed it was important to include the word technology in its title.

While the system of scientific research differed considerably from that of technological development and had very different motivation and conditions for success, the two systems were inseparably related and should be developed together.

The report of the examining panel was discussed recently at a 'confrontation' meeting at the OECD headquarters in Paris.

CSIRO Chairman, Dr J. R. Price, who was among the five Australian delegates at the Paris meeting, said there was much useful discussion and comment by the examiners and by delegates from other OECD countries.

A report of the meeting had been forwarded to Mr Morrison and would eventually be published together with the Examiner's Report and a complementary Background Report on the scientific and technological situation in Australia.

Dr. Price remarked that CSIRO's high reputation was well known among the delegates.

Haunters

Cont'd from page 2

top of tower landing. The others were standing quietly, no doubt hoping to capture the mood.

'She might offer us a cuppa,' he ventured, pulling out some cups and glasses, 'and it's only common courtesy that we do the drying up.'

The bravado of the creature! He was clutching it to his cheek and nibbling on his thumb.

Well, if he was going to take this intrusion on my domain so lightly it was about time I brought him back to reality.

A little concentration and the tower temperature dropped a few degrees.

Now, for some sound effects — these old places do tend to creak, don't they?

More concentration — moonlight filtering through the dusty windowpanes can cast shadows remarkably akin to a stately lady in a hooped dress with leg-of-mutton sleeves.

The exodus from the tower was hardly dignified. With strangled screams of 'Don't leave me here' the men fled after the ladies.

Back on the ground floor near one of the laboratories the headlong rush stopped.

'You women certainly have vivid imaginations,' the nice young gentleman was saying.

'Perhaps she was out of tea,' the other chided coarsely, furtively refolding his teatowel in the dark.

The ladies were smiling as they made for the exit. 'Ghosts are for children. I mean, four grown people creeping around in the middle of the night in search of a legend . . . the scientific mind boggles.'

Yes, it is a little silly, isn't it?

But I can tell you they are still wondering how the pilot light on the centrifuge machine next to the fish laboratory happened to be on as they left.

The machine had not been used for three weeks, and the nice young gentleman had checked the building thoroughly when the other scientists finished their work earlier in the night.

Ah well, one has to do one's bit for science . . . doesn't one?

Official

The use of the courtesy title 'Ms', the cause of a controversial debate in 'Coresearch' when it was first introduced in this paper a couple of years ago, has now been officially recognised by the Organization.

CSIRO will now use 'Ms' as an alternative to 'Miss' or 'Mrs' on official forms.

According to a recent policy circular, CSIRO will also drop the use of the expression 'Christian names' and instead use the expression 'given names'.

Vic. Credit Society in sound position

Directors of the CSIRO Co-operative Credit Society Ltd in presenting their annual report to members have drawn attention to the difficult year experienced by the society through the continual upward movement of interest rates in the community. This, they said led to increased competition for investment.

There were times during the year, the report states, when the level of investment in the society slowed to such an extent that the processing of loan applications was severely curtailed. For one period this activity ceased altogether.

In a continuing endeavour to attract more capital, the Directors increased interest rates on four occasions.

There was a gradual response by investors to those rates and towards the end of the financial year the society was again able to accept and process loan applications without restrictions.

Despite all the difficulties, the society was in a sound financial position, the report continues, and the year's trading resulted in a profit of a little more than $5000.

Once again there were no bad debts.

'This reflects not only sound management practice but also the co-operative spirit and sense of responsibility which members bring to their business affairs and is a record of which the society can be justly proud.'

The membership of the society at the end of the financial year stood at 2441, a net increase of 78 for the year.

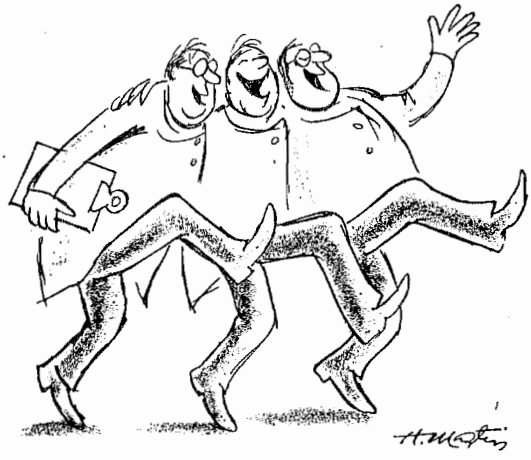
'About 33 per cent of all CSIRO employees are members of the society, a fact which is encouraging to the directors, especially as similar credit societies operate in both Sydney and Canberra,' the report adds.

The total amount of money held on deposit by the society was almost $3.15 million, a sum that was very close to last year's figures.

This contrasted sharply with the growth rate which the society had experienced in previous years and reflected, the Directors believed, the economic situation at present prevailing in the community.

From BSIP

The Chemistry Section of the Division of Soils in Adelaide has a Solomon Islands visitor for six months. He is Mr S. Lekueta (above) from the BSIP's Soils/Plant Nutrition Section of the Department of Agriculture on Guadalcanal.
Arrangements for Mr Lekueta's Fellowship were made by the Australian Government.
While he is at the laboratory he will work with Mr A. R. P. Clarke studying the latest techniques for the analysis of soils and plant material.



'Oh, the Cro-Magnon bones are connected to the Neanderthal bones, the Neanderthal bones are connected to the Heidelberg bones, the Heidelberg bones are connected to the Peking bones. . . .'

Courtesy Saturday Review.

The F. C. Pye Field Environment Laboratory of the Division of Environmental Mechanics held its 1974 Donor's Dinner on Hallowe'en.
The Dinner is an annual event in honour of Mr F. C. Pye, the N.S.W. grazier whose benefactions to CSIRO enabled, among other things, the building of the Laboratory. Unfortunately, Mr and Mrs Pye were unable to attend this year.
Head Office guests at the Dinner were those of Dr J. R. Price, Dr A. E. Pierce, Mr L. G. Wilson, and Dr J. B. Allen and their wives, and Mr V. D. Burgmann.
Messrs J. J. Finnigan, K. M. Perroux, T. Talsma, and J. White, and Ms C. Talsma were captured in the photograph towards the

New award

An annual award of $100 to purchase tools of trade and technical reference books is to be made to the CSIRO apprentice who has achieved the most significant improvement in all-round performance during the final year of his apprenticeship.

The award, offered for the first time this year, will be named after the late Arthur Frost, foundation secretary of the NSW Laboratory Craftsman Association and at the time of his death, General Secretary of the CSIRO Association.

Interested craftsmen should consult information circular 74.79 for details.

'Coresearch'

'Coresearch' is produced by the Central Communication Unit for CSIRO staff. Members are invited to contribute or send suggestions for articles. The deadline for material is normally the first day of the month preceding publication.

Material and queries should be sent to the Editor (Dorothy Braxton), Box 225, Dickson, A.C.T. 2602, Tel. 48 4478 or Wendy Parsons, 48 4227.

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