CoResearch

No. 338 February 1991 CSIRO's staff newspaper

CSIRO AUSTRALIA

Research priorities released

About a year back CSIRO decided to get a firmer grip on its research destiny by taking on the difficult and internally sensitive job of assessing national research priorities, and, from that, deciding what its own role should be in responding to them. Difficult, because it was uncharted territory, meaning an approach had to be worked out virtually from scratch. Internally sensitive, because it is the nature of sets of priorities to set some goals below others, and the nature of scientists to set their own on top. CoResearch officially releases the results of the Executive Committee's deliberations, together with some funding consequences, in a centre-spread on pages 4 and 5. Pictured opposite are a couple of the lucky conscripts currently struggling to knock together a system that can turn the newly adopted causes into effects within the Organisation.

Dr Bob Frater, Director of the CSIRO Institute of Information Science and Engineering, and now also Chair of a working group set up to advise on implementation of the Organisation's new decisions on CSIRO's response to national priorities: 'Nationally, we are only one of the players, and often a minor one. Our response has to be made in terms of whether we can make a meaningful contribution.'

Dr Mike Rickard, Chief of the CSIRO Division of Animal Health and a member of the new priorities working group (see caption above): 'If you're very heavily dependent on external earnings, in fact, you have to largely be serving the priorities of those industries that are funding you.'

Former head of CSIRO dies

Mr Victor Burgmann, CBE, Chairman of CSIRO in 1977 and 1978, died on 7 February in Sydney after a long illness. He leaves behind him his wife Lorna, and their four children, Jon, Beverley, Meredith and Verity.

Mr Burgmann was perhaps most famous for his pioneering work in radar during the Second World War, but is also remembered in CSIRO for his leadership during the difficult period when its structure and activities were subjected to a comprehensive review by the Birch Committee of Inquiry.

Mr Burgmann became Chairman of CSIRO on March 25, 1977. Staff serving under him at that time said that his leadership and competence as an administrator quickly earned their respect.

On his retirement in September 1978 the then Prime Minister of Australia Mr Malcolm Fraser said, 'That CSIRO, the Government, and the community at large, can look forward to the next phase in CSIRO's history with optimism is due in no small measure to your stewardship over the past 18 months.'

Mr Burgmann graduated BSc from Sydney University in 1936 and BE (Hons) from the same university in 1939.

In the same year he joined CSIRO's Division of Radiophysics, and with the outbreak of war became involved in the development of radar.

He spent several years in London and then in Washington, investigating developments in radar.

After the war, Mr Burgmann returned to the Division of Radiophysics and led a team that developed radio navigational aids for aircraft.

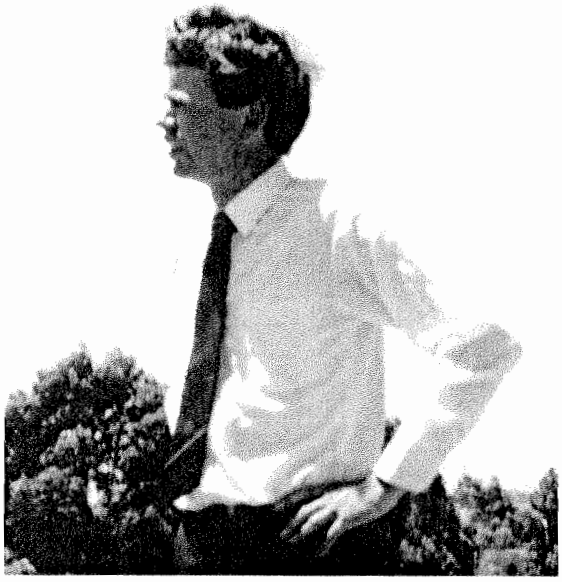
He later became Chief of the Division of Textile Physics, and later again a Member of the Executive of CSIRO.

His work brought him many honours, among them the Prize of the Institution of Engineers in 1939, the Bronze Medal of the British Institute of Navigation in 1951, and finally his creation as a Companion of the Order of the British Empire in 1977.

Four CSIRO Chairmen gathered at a farewell function for Victor Burgmann held at Forestry House, Yarralumla, Canberra, on the occasion of his retirement as Chairman of the Organisation in September 1978. (At that time the head of CSIRO was known as Chairman, not Chief Executive.) The four leaders are, from left, Mr Victor Burgmann, Sir Robert Price, Dr Paul Wild, and Sir Frederick White. Photograph from CoResearch No. 223, Oct/Dec 1978.

Let's tackle this thing head-on!

(Uh...which bit **is** the head, actually?)



To ensure that I wasn't overburdened with spare time during my first three months as Chief Executive, the Board slipped in among my initial tasks the little matter of assessing national research priorities.

The Executive Committee members and I held a number of workshops and, bit-by-bit, established a set of methods, which are now being applied across the Organisation. You could say that the taking up of that particular challenge has set the Organisation rocking from its Canberra headquarters to CSIRO sites all over the Australian continent. It's reached its climax, now, with the first results reported in this issue of *CoResearch*.

We weren't looking only at what CSIRO does, but also at what it might do. We had to work out the relation of the present mix of research activities to our vision of the Australia of the next two or three decades, and beyond.

Of course, having worked that out, we've entered a continuum. We can never say we've done it, once for all, and now we can get stuck into the work involved. These new priorities are less like ordinances in stone than provisional jottings in wax. They operate in relation to a changing national situation, and one driven largely by factors over which we have little or no control — from foreign markets to the weather.

We have to be prepared to change our tactics — and even our strategies — with changing times, and we have to keep questioning our assumptions.

But the goal is to ensure that this necessary process of change can be handled within the normal planning cycle of the Organisation and *not* require the massive, disruptive reviews and restructuring that have characterised our recent past.

Taking the long view doesn't get us out of the job of constantly looking at new needs and opportunities as they get up, and fitting them into the broader concepts and priorities.

Our new priorities — and the process we have gone through to develop them — have made us more than ever fit for a leading role in the dialogue with government and industry that will decide just how Australia goes about becoming a clever country.

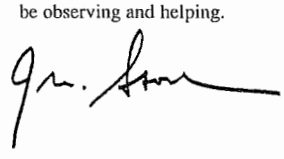
Because of the work that's gone into establishing the rules for our own exercise we can now make quite a contribution just in terms of the priority-setting machinery itself — we have acquired some expertise in how you do these things. We've been able to devise a methodology that makes the results of our CSIRO priority-setting exercise directly comparable with results elsewhere.

In deciding what priority weighting to give each research opportunity we've had to go pretty thoroughly into the background factors. Let's say we find an industry that is attractive as a research area in terms of potential benefits to Australia. But then we also find that Australia isn't able to capture those benefits: its industry is in poor shape, or in foreign hands, or has other structural difficulties. Well, we are now in a position to march up to the Government and talk about what it and the industry are going to do about that.

Certainly what we've been looking at is research priorities, but in the course of doing that we've acquired the ability to make a far broader and more important contribution. We've been coming across structural impediments that are holding back more than science: they are holding back national development in general. These in-built impediments exist in the computer industry, the food processing industry, the construction industry ... they're widespread.

Such blocks should be removed, and we now have a stronger voice to say so to government and to industry. We have already been using that voice, in meetings with the Minister, with ASTEC, and with groups like NSTAG, the National Science and Technology Advisory Group, where industry is also involved. The Institute Directors and I are now having frequent board lunches with Australia's major companies, and CSIRO Board members are also participating in this information exchange with industry people. The priorities exercise has made us a more credible and effective conversation partner in these circles.

The Federal Government has just asked ASTEC to embark on a major study whose final upshot will be a white paper on Australia's national research priorities, and our contribution will be a strong one. We have seconded Ron Murnain from the Corporate Resources Branch to work on their team, and Malcolm Robertson, from our Research Data Office, will also be observing and helping.



CSIRO's first Fellow

Start chalking your forelocks for a good grip. Dr John Philip, former Chief of the CSIRO Centre for Environmental Mechanics, has become the historic founding member of the new order of CSIRO Fellows.

The category of CSIRO Fellow has been created to make it possible for outstanding scientists within the Organisation to stick with full-time research and still reach the same rates of pay as those who move over into research management.

Dr John Stocker, CSIRO's Chief Executive, called the new Fellowship an important step in CSIRO's history. 'Dr Philip,' he said, 'has an outstanding national and international reputation. The CSIRO Fellowship recognises this achievement and a lifetime of creative, productive and distinguished service to CSIRO and Australia.'

Dr Philip is already a Fellow of the Royal Society of London and of the Australian Academy of Science.

Typical pioneering research by Dr Philip includes the physics of infiltration (how water soaks into soil), the thermodynamic unity connecting water movement through soil and plants into the atmosphere, and the effects of climate on irrigation and water storage.

'These are examples of sophisticated mathematical physics providing much needed insight into vital practical problems," Dr Stocker said.

The title for the person leading the Centre for Environmental Mechanics has changed from 'Chief' to 'Head', in obedience to a recent Executive Committee decision to restrict use of the title 'Chief' to Chiefs of Divisions and 'Director' to Directors of Institutes. Dr Stocker has approved the appointment of Dr John Finnigan as Head of the Centre for a three-year term for 15 January 1991.

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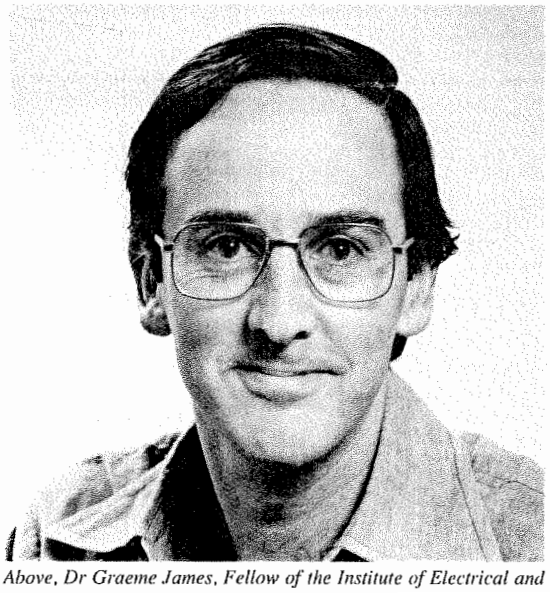
... and a couple of other Fellows



Above, Dr Graeme James, Fellow of the Institute of Electrical and Electronics Engineers, USA Graeme James photo

Two CSIRO scientists have been elected Fellows of the Institute of Electrical and Electronics Engineers, USA (IEEE). Only a few scientists and engineers each year receive this honour, which is limited to 0.1% of membership.

The two scientists are Dr Graeme James, Division of Radiophysics, and Dr Vic Morgan, Division of Applied Physics.

Dr Morgan, a private consultant and an Honorary Research Fellow with Applied Physics, retired in 1988 after being Head of the High Voltage Laboratory at Lindfield for sixteen years. His Fellow grade was awarded for 'contributions to the field of high-voltage electric power transmission.'

Dr James, a Senior Principal Research Scientist in the Radiophysics Electromagnetic and Optics Group, was given his Fellow grade for 'contributions to geometrical theory of diffraction and mode-matching techniques for corrugated waveguides and horns'.❖

CSIRO wins nearly $3million in latest DITAC grants

The Federal Government's Industry Research and Development Board has released details of its latest grants — $10.7 million worth.

The money is to be split among 13 projects to do with information and communications technology, CSIRO has been given three slices of the pie.

The largest grant of the three — $1,369,304 — went to a project to be carried out by the Division of Information Technology in commercial partnership with BHP Research and New Technology.

The project will develop a parallel image processing and display system for the analysis and processing of large and complex image data sets. The system will offer help in a broad range of fields with both general and specialised image and signal processing problems.

The Division of Exploration Geoscience also gained a grant —$988,083 for a three-year R&D project to study rapid digital signal processing and control in geophysical applications.

The main use for the technology generated by the study will be in the airborne electro-magnetic remote sensing of the near surface of the earth. The accurate mapping of shallow features of the earth has become a critically important consideration in two significant areas for Australia — environmental monitoring and mineral exploration.

The World Geoscience Corporation Ltd is the commercial partner for this project.

Another CSIRO project to win a grant comes from the Division of Applied Physics, in commercial partnership with IBM Australia Ltd. It is aimed at solving some practical problems currently holding back the commercial exploitation of 'magneto-optical thin film structures' — a form of mass data storage. The project has been granted $419,473.

The rest of the grant-winning projects were from major universities, with two exceptions.

The Australian Artificial Intelligence Institute was given $480,324 for a project to develop new computer programs able to manage and control 'distributed systems' such as occur in air transport, telecommunications networks and power distribution systems.

The largest grant of all, for $1,900,000, went to a DSTO project mysteriously titled 'Bolometer Infrared Sensor Arrays'. The project will develop components for use in commercial products like night sights and surveillance equipment.

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Attention all human resources

After much head-scratching, brain-storming and soul-searching the first CSIRO human resources plan is here. If it's not on your desk right now it really is 'in the mail'.

It was formally endorsed by the Board in November 1990 for distribution to all staff, and since then it's been a matter of checking and changing and printing and binding and packing and checking again.

The Plan provides a strategic framework for current policies and practices as well as a direction for future policies. Its central messages are —

- CSIRO has to make sure it gets, and keeps, high-quality staff, since they are the key to achieving its objectives; and
- it is up to managers to provide clear leadership and encouragement so that staff can fulfil their potential.

A sub-committee of the CSIRO Consultative Council co-ordinated the growth of the new plan, with full involvement of the unions. More than 900 of CSIRO's 7,000 staff were consulted.

From now on the strategies of the Human Resources Plan will be incorporated into the Organisation's various strategic, corporate and operational plans.

The Human Resources Branch at Corporate Centre in Canberra can provide extra copies of the Plan if you need them.

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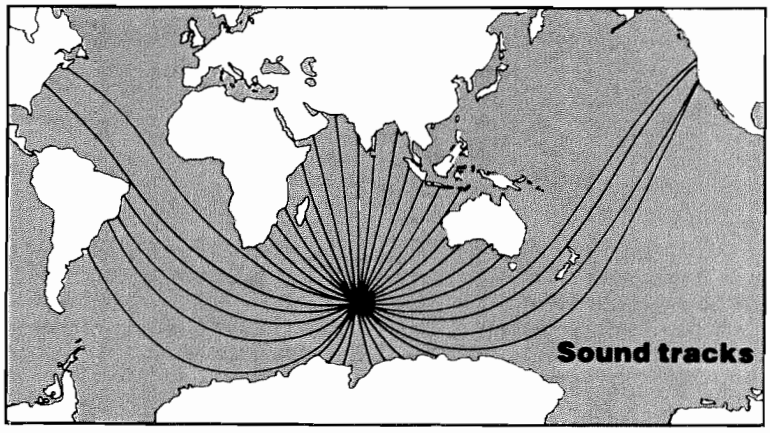
Let's hear it for the greenhouse effect



December's CoResearch ran a story on a plan to measure the greenhouse effect with sound waves. Since sound travels faster in warmer water, the scientists reasoned that they could work out whether the oceans really were warming up, as predicted by greenhouse theorists, by sending sound signals on ocean voyages and timing them. If after several years the times were obviously getting faster, then it would be a good bet the water was getting warmer. An elegant idea, which has now been put into operation, with Andrew Forbes of the CSIRO Division of Oceanography as one of the principal players.

On 7 February CSIRO and US scientists were able to pronounce the first part of the experiment a success. The 35 sound signals they sent off from remote Heard Island in the sub-Antarctic had been picked up by scientists at listening stations around the world, including Bermuda, Ascension Island, South Africa, Canada, India, Tasmania, Kerguelen, Nova Scotia, Oregon, California and Christmas Island.

The experiment, which ran from January 26 to February 1, was planned as a feasibility study for the larger program aimed at finding out whether or not our oceans are getting warmer. That program could run for a decade or more, but first the scientists will spend several months analysing the results of this first step.

The underwater sound trial was the brainchild of Professor Walter Munk of the US Scripps Institution of Oceanography, who designed the program with Andrew Forbes of CSIRO's Division of Oceanography in Hobart. The two were chief scientists aboard the US research vessel *Cory Chouest* during the experiment.

Scientists on the *Cory Chouest* and its companion research vessel, the *Amy Chouest*, carried out extensive biological surveys before, during and after the experiment to see whether the sound transmissions had any effect on nearby whales, dolphins and seals.

'The marine mammals appeared to behave normally during the transmissions and showed no adverse reaction,' Mr Forbes said.

It was Mr Forbes who last June surveyed the site near Heard Island to check its suitability for the experiment.

Three of the 19 listening stations around the world were staffed by Australians. They were stationed at Tasmania's Maatsuyker Island, Christmas Island and Australia's Mawson station in Antarctica.

Several major US research agencies also took part in the overall program.

The underwater sound experiment is the most sensitive way yet devised of measuring long-term warming in the world's oceans, and has climatologists around the world waiting eagerly for its results.

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New lucerne variety

In New South Wales and Queensland Stemphylium leaf spot is one of a complex of winter diseases that can cause up to a 90% yield loss in lucerne crops.

But the Division of Tropical Crops and Pastures, in partnership with the University of Queensland, has come up with a new variety of lucerne bred to be resistant to a wide variety of pests and diseases, especially Stemphylium.

The variety is called Quadrella, and is the first lucerne variety to be granted provisional plant variety rights (PVR) in Australia. Trial work on the variety is continuing in Australia and is also planned for major lucerne-using countries throughout the world.

Quadrella is under commercial production through USE Lucerne Pty Ltd, a joint company formed between specialised lucerne seed growers and Keith Seeds Pty Ltd.

Managing Director of Keith Seeds, Mr Shayne Martens, said Quadrella had shown outstanding progress so far. 'We now have 1,000 acres sown for certified seed production,' he said.'We believe that Quadrella will follow Trifecta overseas and bring in valuable export dollars for Australia.'❖

CSIRO managing very nicely

The *Australian Financial Review* Prize for Corporate Financial Management for 1990 has been won by Dr Graham Price of the CSIRO Division of Geomechanics in Melbourne.

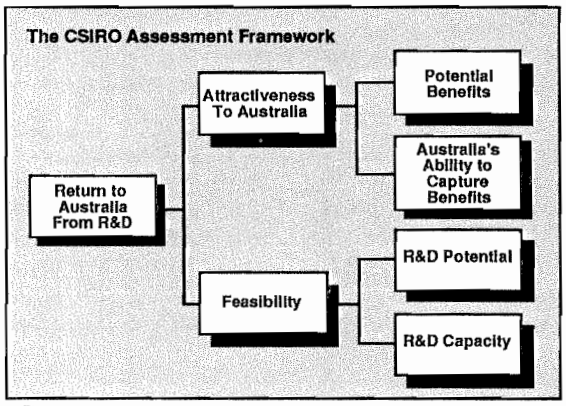
The prize is one of five awarded for the top individual performances among 390 participants in the Diploma Course for Corporate Management run annually by the Institute of Corporate Managers, Secretaries and Administrators.

The prizes carry an award of $500 and an inscribed plaque.❖

Research priorities for CSIRO —

CSIRO has released to CoResearch the first findings of the year-long priority-setting process set in motion by its Board. The exercise has triggered fierce debate inside the Organisation, and gathered an attentive audience outside. The illustration at top left outlines the criteria the Executive Committee used in assessing national priorities, and the bottom two, taken together, show the relations between these priorities. Page 5, opposite, gives more detail on the 'research purposes', as they are now being called, to which research proposals will be directed, together with some initial guidelines for funding. A brief account of the evaluation process appears on page 6, and page 2 carries some personal comment on the exercise from Chief Executive John Stocker.

Ready....



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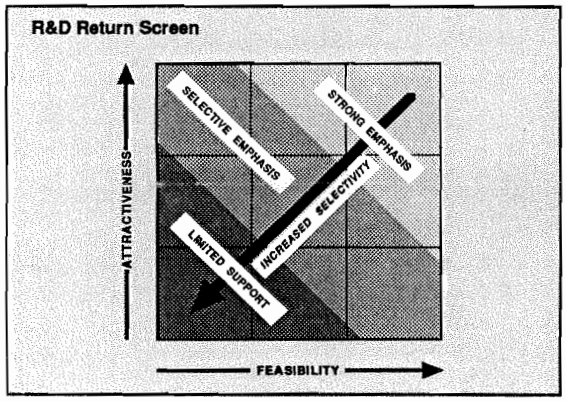


Set!

The next step will be to translate these broad priorities into financial terms.

Three Divisional Chiefs are taking part in a priorities working group part of whose job will be to work out a system for making sure this translation is fair and efficient. The group is made up of representatives from various CSIRO interest areas, listed later in this article.

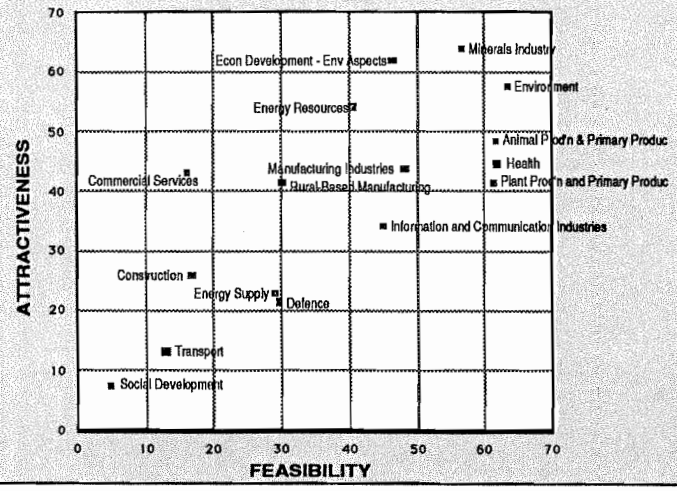
An early idea had been to set up a central resource-pool created by reserving 1.5% of appropriation funds. Research teams would then put forward their proposals in a competitive bid for a share of this money. The amount would be matched out of Institute funds. Using the guidelines shown on page 5, the Chief Executive and Executive Committee would then decide who would get how much out of that pool.

However, some members of the priorities working group made the point that Institutes and Divisions will already be re-allocating some of their own resources under the guidelines, making the central pool to that extent less necessary.

Dr Stocker has accepted this point, but he points out in return that the process must be able to accommodate the shifting of funds between Divisions and between Institutes.

CSIRO 1990 Assessment of National Research Priorities

The Executive Committee considered the production of a single ordered list of research priorities of limited use in further decision-making at the broad national level. CSIRO's final output is therefore in the form shown below. From this, taken with the screen shown above, it is possible to label each sub-division as warranting either *strong emphasis, selective emphasis or limited support*. However, further decision-making will take account of the full range of conclusions arising from the priority assessment, including the part to be played by CSIRO in the national scene.



The working group is chaired by Dr Bob Frater, Director of the Institute of Information Science and Engineering, and includes three Chiefs; Mr Bob Garrett, Finance Branch of Corporate Services; Dr Beth Heyde, Office of the Chief Executive and Board; Dr Irene Irvine, Chair of CSIRO's Communication Working Group; Dr Guy Kretschmer, Corporate Planning Office; Dr Andrew Pik, Chair of the CSIRO Planners Group; and Dr John Yates, Chair of the Institute Resource Managers Group. There are also two or three observers.

The Chiefs on the working group are Dr Rob La Nauze, Division of Mineral and Process Engineering; Dr Jim Peacock, Division of Plant Industry; and Dr Mike Rickard, Division of Animal Health.

Dr Rickard told *CoResearch* he was 'pleased that the Chief Executive has involved people from the whole spectrum of the CSIRO functional areas, because the crucial part will be making the exercise as effective and as economical as possible.

'Otherwise it will simply turn into another bureaucratic nightmare where, you know, there's a thousand and one things to do and people just get very disillusioned with the whole thing.'

He thinks the strategy for shifting resources from lower to higher priorities will help to encourage broad research across Divisions and Institutes, since proposals will be assessed for funding against research purposes based on those set by the Australian Bureau of Statistics (see page 5) rather than on CSIRO's own Divisions.

However, Dr Rickard stressed the point that this sort of cross-divisional research is not new in CSIRO. He cites as an example a vaccine technology initiative he is co-ordinating.

'The actual projects,' said Dr Rickard, 'involve my Division, the Division of Animal Production, the Division of Tropical Animal Production, and the Division of Biomolecular Engineering. So it's across four Divisions and two Institutes.

'I think one of the things that became clear when we were sitting on this working party — and again, particularly with those Divisions that have such a very high level of external funding — is that in fact, if you're doing your job, you are constantly looking at your priorities, and you are constantly changing and modifying those. And if you're very heavily dependent on external earnings, in fact, you have to largely be serving the priorities of those industries that are funding you.'

Dr Andrew Pik says that when it comes to implementing the new priorities, 'we still have a long way to go'. He thinks the funding guidelines need tightening up before they are specific enough to be meaningful. But, like the others interviewed by *CoResearch*, he has no quarrel with the priority-setting process itself.

CSIRO's priority-setting exercise will have a direct impact on a major study recently begun, at the request of the Prime Minister, by the Australian Science and Technology Council (ASTEC).

The study will develop the national framework for setting R&D directions, and eventually form the basis of a white paper to be tabled by the Prime Minister in May 1992.

Mr Ron Murnain, from CSIRO's Corporate Centre, was seconded to the ASTEC team in mid-January, but will stay in close touch with CSIRO throughout the study.

Mr Malcolm Robertson of the CSIRO Research Data Office will also be working closely with the ASTEC team, since data on the national R&D effort will be an important part of their work.

ASTEC has called for submissions from interested parties, and CSIRO will be making a submission, on 20 February, which will draw heavily on the national priority-setting exercise, both its methodology and its results.

The CSIRO Board has remained actively involved with the project throughout. (See *Matter of Opinion* by Board member Ralph Ward-Ambler, *CoResearch* No. 334, page 3.)❖

Page 6 gives an outline of the system that was used for deciding the new priorities, along with a rather different perspective on the exercise from an ex-CSIRO artist.

Official funding guidelines

CSIRO's strategy for responding to the national priorities

Research teams will submit proposals in a competitive bid for funding. Below are the guidelines the Executive Committee will use to decide which of these proposals will get how much from where

Plant Production and Primary Products

(— research to benefit field crops, horticulture and forestry, and the primary products of these industries)
Proposals should be selective, focusing on field crops; resources to be shifted to environmental aspects; priorities of horticulture and forestry will be reassessed within the next two years with particular account being taken of changes in industry performance and commitment and government policy; external funds for horticulture and forestry expected to increase substantially.

Animal Production and Primary Products

(— research to benefit livestock production, the fishing industry and their primary products (wool, meat, milk, fish, other))
Proposals should be selective, focusing on product quality and marketability; resources to be shifted to environmental aspects; industry funding should increase in fisheries; external funding should remain at or above the CSIRO target level.

Rural-based Manufacturing

(— research to benefit processed food and beverage production, fibre processing and textiles, wood products and furniture, leather, other)
In wool processing the target is for appropriation funding to remain constant; external funding in food processing and forest products to increase to the CSIRO target level.

Minerals Industry

(— research to benefit exploration, mining and extraction, refining and smelting and the production of basic metal and mineral products)
Increase appropriation for strategic research across the minerals industry; external funding at the CSIRO target level overall, with substantially higher external funding for applied research.

Energy Resource Industry

(— research to benefit the exploration for, mining and extraction of, and preparation and supply of energy resources (uranium, coal, oil, other))
External funding to be substantially above the CSIRO target; proposals should include a high contribution from industry; Australia's R&D capacity should be increased, but largely from industry funding.

Energy Supply Industry

(— research to benefit the transformation, distribution, conservation and efficient use of energy (electricity, gas, liquid, other))
Resources to be shifted to environmental aspects; five-year target of significantly above-average external earnings; proposals to emphasise areas that couple users to research in both IMEC and IIT, wherever appropriate.

Manufacturing Industry

(— research to benefit manufacture of mineral, fabricated metal and chemical products, machinery and equipment (transport, agriculture and mining appliances))
High selectivity; proposals to address specifically the ability of Australia to capture the benefits of the proposed research; external funding should be at least at the CSIRO target level.

Information and Communication Industries

(— research to benefit production and provision of computer and communications equipment, software and services)
High selectivity; Australia's ability to capture benefits to be specifically addressed in proposals; external funding to increase to the CSIRO target level.

Construction

(— research to benefit planning and design, construction materials, methods, products and services (residential, industrial, civil, other))
External funding to increase markedly.

Transport

(— research to benefit the provision of transport services (road, rail, sea and air) and 'inter-modal' materials handling (i.e. handling that uses more than one mode of transport))
Wind down appropriation funding toward zero; opportunistic approach; generic research for the subdivision will be carried out largely in other areas; should be mostly externally funded.

Commercial Services

(— research to benefit water supply, wholesale and retail trade, finance, property, business, recreation (tourism) and other services)
External funding expected to increase in areas other than water supply and standards; expansion of activity in other areas will depend on identified opportunities and external funds.

Economic Development — Environmental Aspects

(— research to minimize the pollution and other environmental degradation arising directly from activities associated with sub-divisions 1–10 (i.e. all the above))
Total funding to increase; appropriation funding to increase by a small amount in the confident expectation that this will produce additional external funds through aggressive 'marketing'; external funding to increase substantially. CSIRO to take a national lead.

Environment

(— research to provide knowledge of climate, ecosystems, atmosphere, oceans, water resources etc., to aid conservation and sustainable use)
Total appropriation effort expected to be maintained through specific proposals in priority environment areas; any growth in CSIRO's effort to be largely from external funds; external funding could be at a level less than the CSIRO target.

Health

(— research to benefit public health, clinical health (organs, diseases and conditions) and health and support services)
Strong role for CSIRO activity in the area of human nutrition (public health), which should be maintained; external funds for this area expected to be below the CSIRO average; involvement in areas of health research outside human nutrition (public health) to be on an opportunistic basis only — substantially externally funded.

Defence

(— research to benefit the defence-related industries (electronics, weapons systems, surveillance, aeronautics, materials, other))
Appropriation funding only if flow-on benefits to other areas are expected; otherwise an opportunistic approach substantially externally funded.

Social Development (Community Services)

(— research to benefit social development and welfare services, public services, recreation and heritage (natural and cultural))
Expect very little, if any, appropriation funding; targeted applications of research conducted for other purposes; opportunistic approach substantially externally funded.

Official funding guidelines

1. These research purposes are in Australian Bureau of Statistics order, *not* order of priority.

2. 'CSIRO target' refers to the 30% target for external funding.

Priorities — *what makes some more prior than others?*

Well, it's all over bar the shouting, and we even have some indication of whose shout it will be, but in case you're interested in just how those new research priorities were established, the following is a brief account of the process. More — much more — is available from the Corporate Planning Office or your Institute planners.

It's more than a year now since CSIRO first took a step back to have a careful look at its priorities, building on an approach the Board had already broadly mapped out. It was a job that fell, naturally, to the Executive Committee, consisting of the Chief Executive, the six Institute Directors, the Director of Corporate Services and the Managing Director of Sirotech.

They began by giving close attention to —

- classification of the total possible national research effort into convenient and meaningful units or 'research purposes';
- the criteria they would use to assess those research purposes; and
- the methodology — or stock of procedures and working concepts — they would use to assess the priorities.

Classification of research purposes

The Committee adopted a modified version of the national research classification used by the Australian Bureau of Statistics. This categorises all research into four 'divisions', or principal objectives — advancement of knowledge, economic development, national welfare and national security.

Each of these divisions is further divided into sub-divisions, which are in turn divided into groups, and the groups into classes at the very bottom of the pyramid.

From the sub-divisions the Executive Committee chose those that were relevant to research in the field of science and technology, re-organising them into a form more meaningful to CSIRO. These became the research purposes on page 5 of this issue.

Evaluation criteria

The Committee drew from a number of sources for its final framework, but it is mainly an adaptation of an approach developed by the Industrial Research Institute of the United States, in the period 1982–84, for assessing return on R&D. It is centred on four criteria:

- the **potential benefits** (economic, environmental and other social benefits), i.e. the maximum commercial or other returns possible from technological improvements resulting from research for the purpose in question;
- **Australia's ability to capture the benefits**, i.e. the ability of Australia's organisations, private or public sector, to convert technical progress into commercial or other returns;
- **R&D potential**, i.e. the scientific or technological potential of relevant research areas; and
- **R&D capacity**, i.e. Australia's ability to conduct the R&D and realise its potential in a timely way.

Methodology

After much reading, listening and talking, the Executive Committee gathered as a group. Each member gave a score to each of the criteria for each research purpose. Then they got together to discuss the scores, and, in some cases, to clarify understanding and do them again. Finally they averaged their scores to arrive at a score for each research purpose.

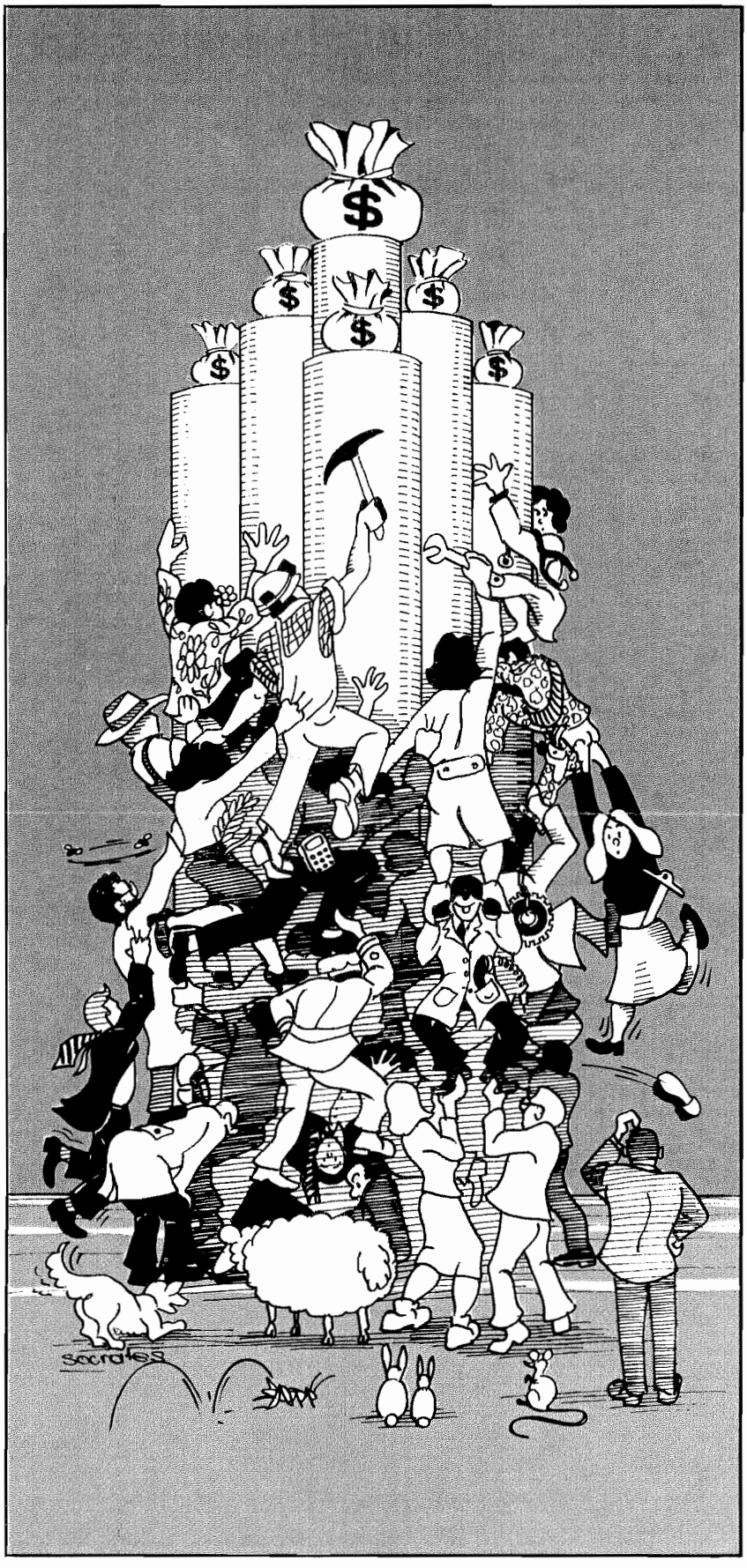
The Committee makes no pretence that this is, or can be, an objective process in any scientific sense. The scores are based on the best information available, but of course they are still personal judgements. And the Committee stands by them.

The two factors shown on the results graph (bottom of page 4) are labelled 'attractiveness' and 'feasibility'.

'Attractiveness' was determined by multiplying the score for potential benefits by that for ability to capture. It measures the likely benefit of successful research, and is determined by factors over which research organisations have little control.

'Feasibility' was determined by multiplying the score for R&D potential by that for R&D capacity. It is a measure of ability to achieve technical progress in Australia, per unit of R&D investment.

A research purpose that ranks high on both attractiveness and feasibility clearly warrants investment of resources. So, the further towards the top right-hand corner of the graph a research purpose lies, the more it is considered deserving of support. By the same token, selectivity in providing resources needs to increase as research purposes lie further towards the bottom left.❖



Then again, there are other ways of looking at this whole business. The above view of priorities comes from graphic designer Socrates Paschalidis, formerly of CSIRO.

CSIRO granted triennium funding

(first victory for Project Ambassador?)

On the last day of January the Minister for Science and Technology, Simon Crean, announced that the Federal Government would continue CSIRO's triennium funding. (Yay, Team!?)

Other major scientific bodies were included in the step, which was 'designed to free them from annual uncertainty over their budgets'. The others were the Australian Science and Technology Organisation (ANSTO) and the Australian Institute of Marine Science (AIMS).

The government has also undertaken to maintain budget funding in real terms over the three-year period.

'Triennium funding provides a secure, long budget cycle so scientists can get on with the job the organisations were set up to do,' Mr Crean said.

Perhaps more important than the immediate gain is the Cabinet decision that triennium funding should become 'an accepted philosophy'.

'In those years, the agencies made an important start in changing the way they work,' Mr Crean said. 'Triennium funding gives them the flexibility and stability to plan longer term research programs and priorities. They can also develop closer relationships with industry through strategic joint ventures.

Previously agreed targets for external earnings will continue for CSIRO and ANSTO, with a similar target now also applying to AIMS: 30% of total funds by July 1991 for CSIRO; 30% of appropriation funds by 1993 for ANSTO; and 30% of appropriation funds by 1996 for AIMS.

Cabinet has put off decisions on other funding issues; Mr Crean and other relevant Ministers will meet later to decide the issues of supplementation for pay increases and the efficiency dividend.

On the day of the decision CSIRO Chief Executive Dr John Stocker sent a statement to all staff letting them know the good news about the triennium funding and commending Mr Crean for arguing our case so forcefully within the Government.

He also assured staff he and Mr Crean would be 'working hard' in the coming months to make sure the Government understood the importance of the remaining issues.

Professor Tony Wicken, President of the Federation of Australian Scientific and Technological Societies (FASTS), was less sanguine about the decision.

'The announcement,' he said, 'may be welcome. It depends on whether it is three years of good funding or three years of bad.'

'And there is a hint in the announcement that it could be the latter. The Government is actually considering not paying all of the increase in salaries awarded to CSIRO staff by the Industrial Commission.

'If a large company with a large profit and a relatively small, skilled workforce welched on paying such increases there would be outrage.

'The award restructure provided by the Industrial Commission was in recognition of the greater skills efficiency of CSIRO staff. It was obtained through fair process.

'If the Government welches on funding for CSIRO what is the message for Australia? That the 'clever country' concept is just hype, that award restructuring can be ignored if the government does not like the outcome?

'The Hawke Government must put its money where its mouth is or risk greater cynicism in the electorate.'❖

All I know is ...
when it comes to long-term financial strategies, if we don't triennium nunnum'll work. —Ed.

Maybe de gustibus *ain't* what dey used to be, but we'd rather catch up than criticise

Above, Chairman Neville Wran visits the Tokyo facility of CSIRO's Sensory Research Centre during a private visit to Japan. On his left is Mr Shuji Hirose, Chief Executive Director of the Japan, Australia, New Zealand Society.

The Japanese are really into food, compared to us, and they don't mind paying for it, either. Every year they spend more than $A400 billion on it, and a tenth of that — or $A40 billion worth — is imported.

Currently, Australia is providing less than $A3 billion worth of the annual Japanese shopping list, but CSIRO's Sydney-based Sensory Research Centre has been trying hard to increase that amount. They call their effort the Japan Project.

Until now a major obstacle to the Australian industry has been that the Japanese have different taste preferences from the Australians.

The Japan Project team has been working with a major Japanese consumer group to develop foods made from Australian ingredients that satisfy Japanese tastes. At the Japan Project's Tokyo facility Australian food can be cooked by speciality Japanese chefs and tested by Japanese tasters .

On 23 January, during a private visit to Japan, CSIRO Chairman Neville Wran joined a panel of 30 Japanese taste-testers at the facility to try out some newly tailored products.

Mr Wran said CSIRO's work with the food industry was vital to expanding Australia's share of the Japanese market.

'The Japan Project,' he said, 'is a fine example of how co-ordinated quality market analysis, first-rate scientific research and sound strategic decisions by Australian companies build an enduring collaboration between Australian and Japanese scientists.

'A number of prominent and forward-looking Australian food and beverage companies have already signed up for the Japan Project, and I hope we can encourage others in the industry to take this step towards securing their slice of the expanding markets in Japan and other countries in Asia.

'It also provides an opportunity to further relations between Japanese and Australian food suppliers and distributors.

'I hope this research by CSIRO helps the two nations' people understand each other better.'❖

Half-price haircuts now for CSIRO?

Popular local personality and internationally respected institution Commonwealth Scientific and Industrial Research Organisation (CSIRO — pronounced 'sigh-row') will be celebrating its 65th birthday at its Black Mountain property in the nation's capital, Canberra, on Friday March 15.

Actually born on March 16, CSIRO has chosen the 15th for the celebration as most of its friends will be busy on the 16th, which is a Saturday.

Asked by *CoResearch* how it felt about turning 65, still-sprightly and remarkably articulate CSIRO replied, 'I'm really looking forward to it.

'I'll be able to get on with some of the things I've been wanting to do for years but couldn't because of work. Like a bit of scientific research, just whenever I feel like it, without having to worry if the boss is going to catch me at it.

'It'll feel funny, of course. I guess I'll be looking over my shoulder for a few years yet,' sighed the colorful old character.

'But I don't think I've forgotten how. It's like riding a bike, research,' chortled the cheerful sexagenerian.

CSIRO told *CoResearch* it attributed its youthful vigour to the simple, clean living that becomes a habit when you're on low rates of appropriation.

❖❖❖

The CSIRO social club in Canberra really *is* organising a celebration, probably at the Division of Entomology, though the details aren't sorted out yet.

If you've got any ideas or questions the person in charge is Gary Knoble, (06)276 6442.

A lot of people think it would be great if there were celebrations at sites all over Australia, but it's a bit late for organising anything nationally.

One suggestion was a fancy-dress parade through the streets. Less boring than a barbecue.❖

Vale Richard Kassulke

VALE RICHARD KASSULKE

This tribute from the the Division of Entomology was prepared by Ken Harley.

It is with great sadness that we record the death of Richard Kassulke on 22 January 1991 after a long and debilitating illness. Richard joined the Division of Entomology in December 1964 and worked continuously in the Division's programs on biological control of weeds until March 1990. Richard was stationed in Brisbane where he worked on Noogoora Burr, Lantana, several aquatic weeds, and on Mimosa, Sida and Hyptis. Richard was on the research team responsible for biological control of the floating aquatic weed salvinia. The team's work was recognised by award of the UNESCO Science Prize in 1985; an AIDAB Bicentennial Award for Excellence in Overseas Development Assistance in 1988; Honourable Mention in the Rolex Awards for Enterprise in 1990; and a film on biological control of salvinia in Papua New Guinea, entitled 'Assault on the Sepik', was awarded Best Didactic Values at the International Festival of Science Films, Barcelona, 1985.

Richard participated in the release and subsequent field assessment of a number of biological control agents and, for many years, he managed the quarantine facility at the Long Pocket Laboratories. As manager of the quarantine facility he studied the biology and host-specificity of a number of candidate biological control agents and was co-author in 20 scientific publications. In recent years he participated in exploratory surveys in Mexico for control agents for Mimosa, Sida and Hyptis. Richard greatly enjoyed travel, and his involvement in exploratory activities catered to this interest as well as his intense interest in finding and evaluating insects for biological control of weeds.

Richard is sadly missed by his colleagues and friends in the Division of Entomology and at Long Pocket Laboratories.

Care for kids, and keep your career options open

Dr John Stocker, Chief Executive, turned the first sod at CSIRO's first child-care centre at a lunch-time ceremony at the Division of Entomology's Black Mountain site in Canberra on 14 January.

Dr Stocker said that CSIRO currently planned to build three on-site child care centres. As well as the Black Mountain site, which was expected to be operating in July this year, CSIRO would also build centres at its North Ryde site in Sydney and at its Clayton site in Melbourne this year.

'CSIRO is well ahead of most other Government and private organisations in having an equal employment opportunity program recognising that staff, particularly women, have family responsibilities,' said Dr Stocker.

'The significant salary rises that were awarded CSIRO staff recently by the Industrial Relations Commission and the provision of on-site child care facilities are part of a human resources strategy aimed at making CSIRO an attractive and modern employer.

'These are important moves in ensuring that we continue to retain and attract excellent staff.

'The three CSIRO child care centres will be entirely funded by CSIRO, and this underlines CSIRO's recognition that staff should not have to jeopardise their careers when they also become parents.

'Each child-care centre would have about 40 places and children of CSIRO-employed parents would be given priority over other applicants," he said.

The Black Mountain child-care centre is costing CSIRO $520,000.

Plans for the centre at CSIRO's Clayton site are also making progress.

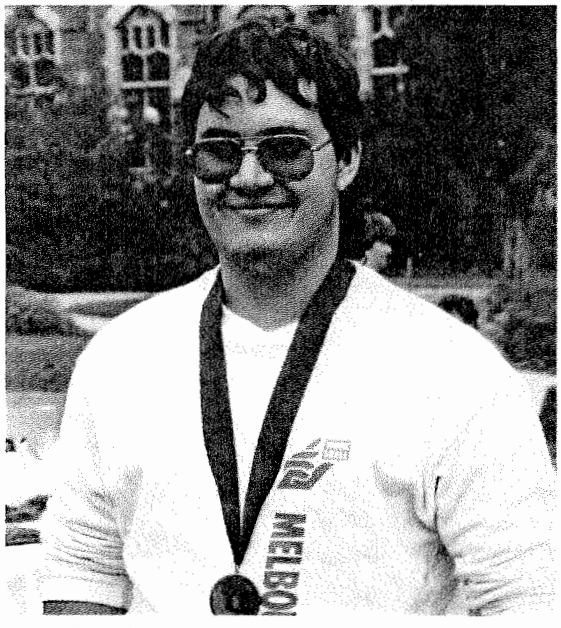
Ms Carmel McPherson of the Human Resources Branch has said she is very impressed with staff's efforts there so far. She has been able to have funding for the centre approved and brought forward to the 1990–91 financial year. She has also persuaded CSIRO to provide an extra $20,000 towards establishment costs once the centre is constructed.

The Clayton child-care centre committee thinks the centre may be ready to open by October 1991. At the moment they are looking at ways of raising extra funds and would welcome any suggestions or offers of help.

❖❖❖

Above, John Stocker is offered the choice of changing the first nappy or turning the first sod at CSIRO's first child care centre at Black Mountain in Canberra — and disappoints a crowd of eager onlookers by choosing the the soft option.

Geomechanics apprentice takes out Bronze Medal



Michael Camilleri , an apprentice fitter and machinist at the Division of Geomechanics at Syndal in Melbourne, displays the Bronze Medal just presented to him at Ormond College, Melbourne University. He won the medal for his skill in Numerical Control Machining at the National Workskill Engineering Finals held in December last year. Photo by Roger Digby, CSIRO Apprentice Co-ordinator.

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CoResearch
No. 339 April 1991 CSIRO's staff newspaper
CSIRO AUSTRALIA

Co-operative Research Centres

CSIRO scores 15 out of 15

On March 14 Minister for Science and Technology Simon Crean announced the first 15 of up to 50 Co-operative Research Centres the Federal Government will set up under a program it announced when it came into office last year. (See *CoResearch* No. 331, April 1990.) CSIRO figured in 14 of the centres announced, but it has since been decided that the Organisation will be involved in all 15. It had orignally been left out of the Co-operative Research Centre for Aerospace Structures, but will now be part of the second (and further) phases of that project, due to begin around the end of 1992.

There are some people in the Organisation who feel that the centres are a mistake from CSIRO's point of view, in that we stand to lose autonomy, fruits of research, and even researchers themselves.

But the consensus seems to be that even on a selfish level we will gain more from sharing than we will lose, and that the nation as a whole will certainly be a winner from the enterprise.

There will be changes to the conduct of the scheme in the next round, with CSIRO itself having more say in who will be involved, and how, in each centre.

In the week before the Easter break Professor Ralph Slatyer, head of the Prime Minister's Science Council, called together key people in science management to work out improvements to the present system of selection of CRCs.

As a result of that meeting the Institute Directors of CSIRO have been asked to become a 'brokerage' committee to work with the two sub-committees that currently assess the CRCs. These are chaired by Professor Ian Ross from the National University and Dr Keith Boardman, retired Chief Executive of CSIRO.

The Science Council has asked the Directors to act as brokers to pull together disparate aspects of proposals they are familiar with, so that the whole proposal structure can become more focussed on the national interest.

Dr Colin Adam, Director of the CSIRO Institute of Industrial Technology, told *CoResearch* the new committee was designed to 'ensure that we put the first 11 on the field for Australia'.

'Perhaps a University, and a Division of CSIRO, might have a good idea, and it might be a very, very good CRC proposal, but we felt that we could probably strengthen it by bringing in some other people that we know about personally who've got key contributions to make but might not have otherwise been involved in the proposal.

'It's really to make sure that we do have the very best talent in Australia co-operating in the CRCs.

'The ones that I've been asked to take some responsibility for are an automotive industry CRC that would be focussed, we think, around Melbourne University, the Royal Melbourne Institute of Technology and the Division of Manufacturing Technology, and a National Metallurgical Centre which we think would probably be focussed around the University of Queensland, the University of Wollongong, Monash University, and the CSIRO Division of Materials Science.

'We have had submissions and expressions of interest in these broad areas, so the brokerage committees really are attempting to beef up that proposal to make it an even stronger proposal.

Asked his opinion of the CRCs Dr Adam first explained that as a result of the downturn in our agricultural exports exports in manufactured goods for the calendar year 1990 had exceeded exports of agricultural products for the first time in Australia's history.

'It seems to me,' he said, 'that we've reached a watershed in this nation, where we should perhaps look on ourselves at long last as a manufacturing nation, and make sure that we equip our work-force and our industries, and their intellectual capital, with the resources that are needed.

'So I see the CRCs as being a very important part in linking the future opportunities of our manufacturing industry with the academic community.'

The first-round Co-operative Research Centres, (CRCs) with their CSIRO partner and location, are as follows:

•**CRC for Aerospace Structures,** Institute of Industrial Technology (Divisions as yet unspecified), Melbourne and Sydney;

•**CRC for Intelligent Decision Systems,** Division of Information Technology, Melbourne;

•**CRC for Robust and Adaptive Systems,** Division of Radiophysics (Signal and Imaging Technology Program), Canberra;

•**CRC for Eye Technology,** Division of Biomolecular Engineering and Division of Chemicals and Polymers, Sydney;

•**CRC for Tissue Growth and Repair,** Division of Human Nutrition, Adelaide;

•**CRC for Cellular Growth Factors,** Division of Biomolecular Engineering, Melbourne;

•**CRC for Waste Management and Pollution Control,** Division of Water Resources, Sydney;

•**CRC for the Antarctic and Southern Ocean Environment,** Division of Oceanography, Hobart;

•**CRC for Soil and Land Management,** Division of Soils, Adelaide;

•**CRC for Tropical Pest Management,** Division of Entomology, Brisbane;

•**CRC for Plant Science,** Division of Plant Industry, Canberra;

•**CRC for Temperate Hardwood Forestry,** Division of Forestry, Hobart;

•**CRC for Mining Technology and Equipment,** Division of Geomechanics and Division of Mineral and Process Engineering, Brisbane;

•**G.K. Williams Co-operative Centre for Extractive Metallurgy,** Division of Mineral and Process Engineering, Melbourne;

•**CRC for Australia's Petroleum Industry,** Division of Exploration Geoscience and Division of Geomechanics, Sydney and Melbourne.

Some surprise has been expressed inside and outside CSIRO at the failure of Western Australia to gain any CRCs at all, but there is hope that the second round will remedy that.

Above, members of CSIRO's Board inspect the plans of the Division of Forestry building to be erected on this site at the University of Tasmania in Hobart. The new building will be the home base of the Temperate Hardwood Forestry Co-operative Research Centre (CRC) announced by Simon Crean on March 14, and construction is to be complete by the end of 1991. Second from the left is Dr Glen Kile, Officer-in-Charge of the Division of Forestry's Tasmanian Forest Research Group, Program Leader of the Intensively Managed Temperate Eucalypts Program, and Director-designate of the new CRC. The others are, left to right, CSIRO Board Members Dr Tony Gregson, Dr Kevin Foley and Mr Ralph Ward-Ambler. Hobart Divisions did remarkably well in this first round of Research Centre allocations, winning two out of 15 offered throughout Australia. The CSIRO Marine Laboratories in Hobart are holding Open Days on April 18, 19 and 20 with the theme 'CSIRO in Tasmania'. They will feature mainly the work of the Divisions of Fisheries and Oceanography, but there will be displays from other Divisions. The research vessel 'Franklin' will be one of the attractions. The Open Days aim to show the public the sorts of work CSIRO is doing to help industry and the environment. Photo by Barbara Magi.

Stocker in retreat?

It's not often that a staff magazine is plagued by enquiries and pleas for extra copies from the outside world. It certainly hasn't happened to *CoResearch* in recent memory.

Well it happened in response to the February issue, with its late but loud release of the national research priorities.

And I've certainly been dining out on that exercise in recent weeks — responding to a flood of invitations to lunches and dinners with the Boards of various companies. The Australian business community is showing close interest in our analysis. Even some granting bodies — not traditionally noted for their interest in pushing resources to high priority areas — are starting to get bright-eyed about our methodology.

This issue features CSIRO's 65th birthday celebrations, for which I made a speech and cut a cake in Adelaide. I spent my first birthday as Chief Executive in joining the Institute Directors for a little jaunt at Bowral — a retreat (advance?) — at which we discussed the past, present and future of the Organisation.

I called on them to identify what they thought were the most important issues facing us, and to choose a handful of themes from these for discussion over our time at Bowral. Now, some of these were themes that have been with us for 65 years, and others have evolved from our continuous attempts to adapt to changing circumstances.

And that was the first thing we talked about — CSIRO and its multifoliate reviews. CSIRO has been reviewed, revised, restructured, and reorganised. It's had its problems solved, its barriers dissolved, its powers devolved, its destiny evolved, until its head revolved. There is, we might as well admit, some heavy scarring. A bit like an experimental subject who's been used for testing all the new transplant techniques.

We had to ask ourselves what these reviews had actually accomplished, and if we thought our present form the right one for the enormous challenge facing Australia in terms of appropriating research results in the next decade.

The answer we came up with in the end was 'yes'. The structure we have at the moment does enable us to respond, very effectively, to the present needs of Australia in the industry sectors we serve.

It's going to take an increase in awareness of exactly what are each individual's responsibilities within our large R&D corporation. We think the chance to accomplish that has been facilitated by award restructuring, and performance planning and evaluation.

The latter really strikes me as being a tool with which CSIRO staff can begin to gather some of the benefits of functioning as a corporation.

The next question we had to ask ourselves was what that really meant — what are the consequences of CSIRO really being regarded as 'CSIRO Inc.'? And how do we get better at working corporately across a number of issues?

We're going to have to survey the administrative walls which have sprung up over the years. And we must reward those people who take part in productive collaborations between Divisions.

We think we are much better able now, as an organisation, to put together programs to serve the community than we were before we had our present structure. However, there are still some details that need to be worked out, particularly when it comes to large multi-disciplinary collaborative programs involving a number of different divisions.

I was recently privy to a fascinating discussion at the Long Pocket Laboratories in Queensland. The group I was talking with had attended a career development course at Little Bay in which a group of the participants came up with some ideas about the best way to manage these inter-Institute and inter-Division projects. We discussed the risk that lines of responsibility can get tangled when a program's sphere includes the work of quite a few Divisions. There are questions like — who's in charge, how will that person report? What about people whose program is predominantly run by one Division but whose Chief, and administrative home base, is in another Division?

Those are issues that the Directors and I again took up at Bowral, and will continue to discuss in the months ahead. In fact, with the implementation of the new priorities, and with the gearing up of the new Cooperative Research Centres, they will get to be more important and immediate questions. We're going to have to get very much better at effective collaboration.

We agreed that the Institute Directors are now expected to perform as group executives in a large organisation. This contrasts with the tradition in some organisations of people defending their own patch and judging their success directly by how big a slice of resources they are able to grab.

Everybody in CSIRO must think of how best the Organisation can get its act together to ensure external delivery of research results in a usable form. That's what our mission really is.

We also talked about government policy development: where does our role start and stop? We agreed that we really do have a legitimate and necessary role in helping government with policy, but mainly by injecting facts into the discussion.

We think we ought to try to speak with one authoritative voice rather than a lot of little yapping ones below knee-height, inaudible and contradictory. That's always going to be a tricky act for us, and there's a wobbly high wire to be walked between helping the Government set policies on the one hand and helping companies and private industry on the other. We saw that, and gave considerable thought to mechanisms for coping with it. The main thing again is that line managers are going to have to be responsible for the communication activities of staff.

Another topic we discussed was performance contracts for members of the Executive Committee, and I settled with the Institute Directors what their main job descriptions and objects would be. We agreed that performance planning and evaluation would carry right through the Organisation, with me conducting sessions with the Institute Directors similar to the sessions being held between supervisors and their staff at every level. There will be a feature in next month's *CoResearch* explaining in detail what those sessions will involve.

Commercialisation was another theme we touched on, particularly the crucial role of Sirotech in improving the commercialisation of CSIRO.

New edition of Data Book

If you liked the innovative Little Red (Data) Book brought out by the Corporate Resources Branch this time last year, the 1991 edition, in British Racing Green this time, is now available. Like the last one, it offers a statistical overview of CSIRO's research, financial and human resources effort in a literally pocket-sized format. As before, contact Malcolm Robertson on **06 276 6222.**

Letters to the Editor

Dear Editor,
No Australian worth his/her salt could feel anything but embarassment at the photo of John Stocker on the back page of the last issue of *CoResearch* (February 1991). *[See below.]*

Could someone please take him aside and discreetly point out that one is supposed to face away from the wicket when playing cricket, and that there is no advantage in putting your foot on the end of the bat? Perhaps Allan Border could be seconded to CSIRO as public engagements adviser to the Chief Executive.

Neil McKern
Division of Biomolecular Engineering

Dear Dr McKern,
This is waugh!

The photo clearly depicted my heroic attempt to remove the 'efficiency dividend' which still fouls our level playing field like a fresh cow pat.

And that's *not* cricket.

John Stocker

❖❖❖

Dear Editor,
Each month I look forward to the Letters to the Editor in *CoResearch*. I enjoy the free-ranging discussion of CSIRO matters, and I feel reassured by the obviously high level of editorial freedom.

What happened to the Letters in the February issue?

Alister K. Sharp
Food Research Laboratory

That's what I'd like to know. There weren't any.—Ed.

CoResearchers

This column is as thin as it is because it's starving to death! Fatten it, please.–Ed.

EveryBody loves us

(but it looks like cupboard love ...)

Remember the 1988 CSIRO-produced ABC television series 'The Good Food Show', with celebrity chef Gabriel Gaté?

More than likely you don't, since it was stuck with a 'suicidal' time slot early on Sunday mornings.

In spite of that, it was successful enough for the ABC to commission our Film and Video Centre to produce the nutrition segments for their recently aired weekly series 'EveryBody'.

The first six episodes have been a genuine hit. In television jargon they've scored between 14 and 16 — which in English means they're running a close second to the top-rating commercial network show for that timeslot.

And the CSIRO segment of Episode 5 — the fruit episode — nearly blew the top off the ABC switchboard. It was jammed till midnight on the night of the screening, and they tallied up 8,000 requests for the recipe featured.

'EveryBody' is a common-sense lifestyle program for those not necessarily interested in donning leotards and jogging off to power workouts at a health club every day.

The CSIRO segments are presented by Gabriel Gaté, who cooks, offers no-nonsense health information, and interviews experts like Doctors David Topping and Ivor Dreosti, both from the Division of Human Nutrition.

There are 13 episodes in the series, and they're showing at 8.00pm on ABC TV every Thursday night.

Dr Topping appears in four of these episodes, talking about how to pick the perfect breakfast, the benefits of eating fish, the difference between the saturated and unsaturated fats in our diet, and the nutritional value of meat.

The guiding idea of the segments is to cut the hype and misinformation on health and diet so often pumped out through the media; all the nutritional information in these segments has been checked by the Division of Human Nutrition.

But there is also a Project Ambassador bonus to the series: it provides a national platform for CSIRO scientists to talk about their work and its direct relevance to the Australian public.

Below is the recipe that launched 8,000 requests in a single evening. A votre santé!

Gabriel Gaté's recipe
for

EveryBody's fresh fruit cake

Ingredients

1 banana
1/4 cup orange juice
1 tablespoon honey
1 cup pineapple pieces (fresh or canned)
1/2 cup dried fruit
1 cup wholemeal selfraising flour
1/2 cup finely chopped almonds
2 beaten egg whites
1 pineapple ring
4 plums or apricots (fresh or canned)
4 tablespoons flaked almonds

Method

Grease a cake tin (about 20cm diameter) and sprinkle sides and base with half of the flaked almonds. Pre-heat oven to 180C/350F.

Purée banana with orange juice and honey. Pour into bowl and mix with pineapple pieces, dried fruit, selfraising flour, and chopped almonds. Beat egg whites into stiff peaks and carefully fold into mixture. Gently place cake mixture into cake tin and carefully smooth the top. Place pineapple ring in the centre and place halved plums around pineapple ring. Sprinkle with remaining flaked almonds.

Bake in oven for about 40 minutes. Rest the cake for about 10 minutes before carefully unmolding on to a cake rack.

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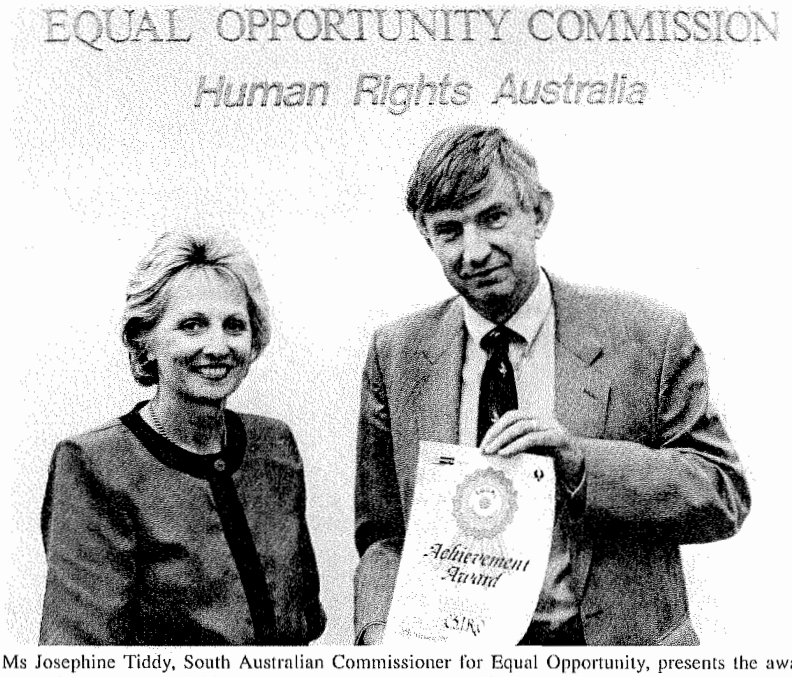
For other recipes in the series phone 008 023 622

CSIRO's attempt to level its own bit of the playing field



Ms Josephine Tiddy, South Australian Commissioner for Equal Opportunity, presents the award recognising CSIRO's initiative in promoting greater equality to Mr Peter Langhorne, Director of CSIRO's Corporate Services.

CSIRO has won an Equal Opportunity Award for a scholarship and training scheme it offers to senior secondary students who suffer from physical disabilities.

The award is one of three given each year by the South Australian Commission for Equal Opportunity. They are designed to give public recognition to individuals and organisations encouraging equal opportunity in the community.

Early in 1989 CSIRO initiated four scholarships for disadvantaged students who might benefit from being encouraged to take up a career in science. The two in Adelaide are designed to encourage students with a physical disability and an aptitude for science to continue their studies to Year 12. The two in Townsville are awarded to Aboriginal and Torres Strait Islander students. CSIRO is now helping eight students under the four scholarships.

The students each win a $500 grant for Years 11 and 12, and are given work experience at a local CSIRO site. They are also offered a year's full-time employment as technical assistants with CSIRO when they finish school.

In the case of the Adelaide program, which is the one that has attracted the award from the South Australian Commission, the 1990 winners will get their work experience at the Division of Soils' Adelaide Laboratory. The students are Daniel Carr from Mount Gambier, who is profoundly deaf, and Rodney Russell from Mundoora, who suffers from spina bifida.

The South Australian Commissioner for Equal Opportunity, Ms Josephine Tiddy, presented the award in Adelaide on February 20. It was accepted on behalf of CSIRO by the Chief Research Scientist and former Officer-in-Charge of the Division of Soils' Adelaide Laboratory Dr Ken Lee, CSIRO's national equal opportunity officer Ms Patricia Quinn-Boas, and the organisation's director of corporate services Mr Peter Langhorne.

Mr Langhorne said, 'Our approach to equal employment opportunity is quite a selfish one'.

'What it comes down to is attracting talented staff and training them whatever their gender, race, belief or physical disability.'

The scholarship scheme is not the only string to CSIRO's equal opportunity bow. Mr Langhorne also drew attention to the Women in Science program, now operating in all states as well as the ACT. Female scientific and technical staff visit schools to try to get young women interested in the study of science before they make final choices about their careers.

But perhaps there is more immediate interest to present staff in the part of the EEO program that includes the setting up of three child-care centres in the next few months. These will be sited in Melbourne, Sydney and Canberra, and each will have room for some 40 children of CSIRO staff.

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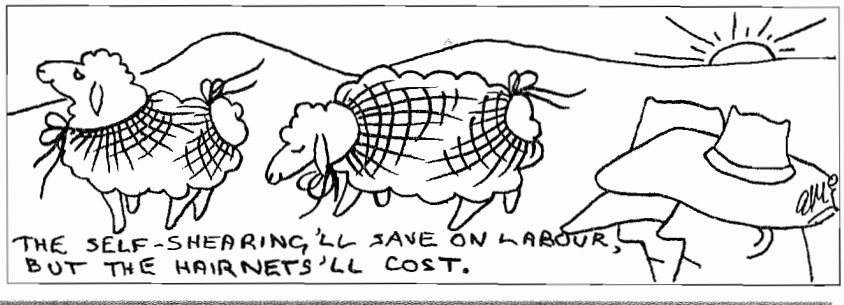


CSIRO has officially turned 65. We won't be getting a pensi

♥ ♥ ♥ CSIRO baby

(There are CSIRO pictures and clippings that are more interesting, but this selection represents ou

from the *Argus*, a now defunct but once respectable Melbourne newspaper, of June 19, 1926 ...

SCIENTIFIC RESEARCH.

NEW COUNCIL APPOINTED.

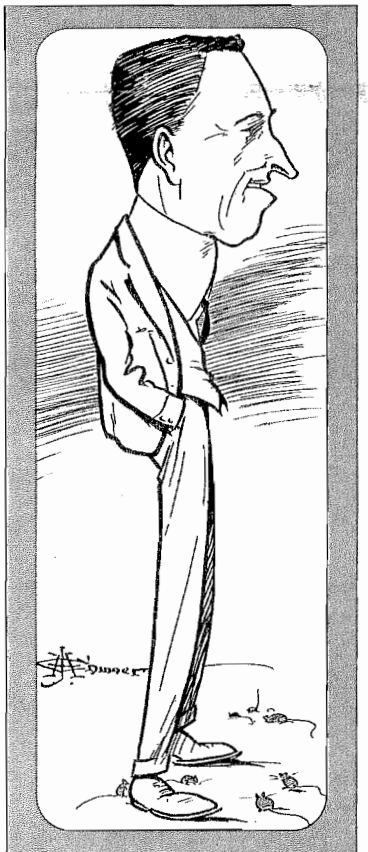
ALL INTERESTS REPRESENTED.

Prime Minister's Announcement.

Before the House of Respresentatives adjourned yesterday afternoon, the Prime Minister (Mr Bruce) announced that the first session of the Council for Scientific and Industrial Research would be opened by him at the council's offices in East Melbourne on Tuesday. Mr Bruce said that the new act which was passed to reorganise the former Institute of Science and Industry provided for the appointment of a council to consist of three members nominated by the Minister ...

Some staff of CSIR, Division of Forest Products, at 314 Albert Street, East Melbourne, around 1930. Left to right, Lil Costello, typist; Ian Langlands, timber mechanic; Isabel Hulme, librarian and records clerk; Jim Currie, ?; Stan McNeil, engineer; Lindsay Gunn, translator; Flo Bishop, telephonist; John Cummings, ?.

Dr R.J. T
Division



A cartoon by an unidentified artist — does anyone recognise the signature? — of T. Brailsford Robertson, Chief of the Division of Animal Nutrition at its inception in 1927. The Division was the precursor of Human Nutrition.

from the *Age*, October 15, 1926

Similarly, the reorganised Commonwealth Council for Scientific and Industrial Research is showing a remarkable propensity to expand its highly-paid personnel. The picture of the savant nobly dedicating himself to the cause of pure science, scorning delights and living laborious days for a reward represented by the knowledge that he had conferred a benefit on mankind does not come within the Government's conception. Part-time members of the council are being substantially remunerated; the chairman, Mr. G. A. Julius, has been appointed for five years at £1000 a year; Mr. W. J. Newbigin and Professor A. C. D. Rivett receive £500 a year each. An offer has since been made to Professor Rivett to accept a whole-time position under the council, to organise and direct the work of research, with salarly of £1500. It is understood that the salary of the secretary (Mr. G. Lightfoot), hitherto £1000 a year, will be substantially augmented. The appointment of a research director, in addition to a council of directors, appears to have been an afterthought, unless it be another example of the principle of delegation. The Government appoints a council; the council in turn wants an executive officer, who doubtless will engage assistants and specialists for various jobs.

The above photograph was *probably* taken in the park opposite 314 Albert Street, on actually a 'baby' photo, but something more like an ultrasound picture of a fetus in th left to right, Mr G. Valder (NSW), Senator J.D. Millen (TAS), Prof. E.J. Goddard ((VIC), Mr R.H. Cambage (NSW), Dr S.S. Cameron (VIC). **Second row**, Prof. B.D Julius (NSW), Prof. H.A. Woodruff (VIC), Mr E.H. Flack (VIC), Dr A.E.V. Richard (TAS), MrW.R. Grimwade (VIC). **Back row**, Mr E. MacKinnon (Secy), Mr G.A. Co (VIC), Mr E.J. Horwood (VIC), Prof. R.D. Watt (NSW), Prof. E.W. Skeats (VIC), Mr C

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♥ CSIRO baby photo

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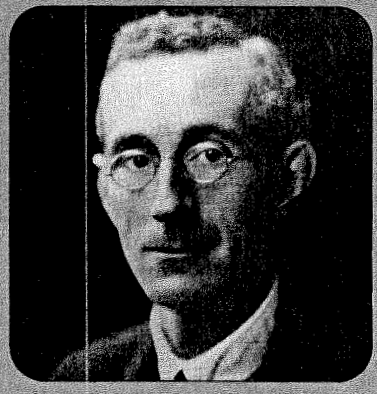

Dr R.J. Tillyard, first Chief of one of our first Divisions, Economic Entomology, now Entomology, formed in 1927.

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The above photograph was *probably* taken in the park opposite 314 Albert Street, on May 30 or June 1, 1925. (OK, so this one is not actually a 'baby' photo, but something more like an ultrasound picture of a fetus in the womb. Everyone's a critic.) **Front row**, seated, left to right, Mr G. Valder (NSW), Senator J.D. Millen (TAS), Prof. E.J. Goddard (QLD), Sir John Monash (VIC), Sir David Masson (VIC), Mr R.H. Cambage (NSW), Dr S.S. Cameron (VIC). **Second row**, Prof. B.D. Steele (QLD), Mr E.J. Mulvany (VIC), Mr G.A. Julius (NSW), Prof. H.A. Woodruff (VIC), Mr E.H. Flack (VIC), Dr A.E.V. Richardson (SA), Prof. A.D. Ross (WA), Mr H.W. Gepp (TAS), MrW.R. Grimwade (VIC). **Back row**, Mr E. MacKinnon (Secy), Mr G.A. Cook (Secy), Mr E. Sholl (Reporter), Mr G. Lightfoot (VIC), Mr E.J. Horwood (VIC), Prof. R.D. Watt (NSW), Prof. E.W. Skeats (VIC), Mr C.E. Lane-Poole (VIC), Mr C.S. Nathan (WA).

Of those, Mr G.A. Julius, later Sir George, was the first Chairman, from 1926 to 1946, when he died. He was an engineer, and the inventor of TAB. Dr A.E.V. Richardson was one of the three-man executive, along with Julius and Rivett, the so-called 'Holy Trinity', who built and ran the Organisation for 20 years. Mr G. Lightfoot, the early equivalent of Peter Langhorne,was administrative head for 20 years.

Institute of Science and Industry Conference, 30 May–1 June 1925.

Front row from left: G. Valder (NSW), Senator J. D. Millen (Tas.), E. J. Goddard (Q'land), Sir John Monash (Vic.), Senator R. V. Wilson, Sir George Knibbs (Vic.), Sir David Masson (Vic.), R. H. Cambage (NSW), S. S. Cameron (Vic.), *Second row:* B. D. Steele (Q'land), E. J. Mulvany (Vic.), G. A. Julius (NSW), H. A. Woodruff (Vic.), E. H. Flack (Vic.), A.E.V. Richardson (SA), A. J. Perkins (SA), A. D. Ross (WA), H. W. Gepp (Tas.), W. R. Grimwade (Vic.), *Back row:* E. MacKinnon (secretary), G. A. Cook (secretary), E. Sholl (reporter), G. Lightfoot (Vic.), E. J. Horwood (Vic.), R. D. Watt (NSW), E. W. Skeats (Vic.), C. E. Lane-Poole (Vic.), C. S. Nathan (WA).

ɔn or reduced bus fares, but at least let's have a peek at the

photo album ♥♥♥

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from the *Argus*, June 23, 1926 ...

With the good wishes of all political parties and the benefit of an adequate monetary foundation, the newly constituted Council for Scientific and Industrial Research has begun its work. It sets out under happier auspices than did the Institute of Science and Industry, which was handicapped from the beginning by a paucity of funds, yet accomplished much good work. The council is particularly strong, but it was a wise plan to have a small working executive on which the scientific, the practical, and the business sides are all represented. The field of operations before the organisation appears to be almost boundless, and it would be well to remember at the outset that the very nature of its work precludes the possibility of any swift return in hard cash for the money spent. Nature does not yield up her secrets in a day. Research students have still to be trained to carry out the vast work that will be necessary, and this is not the work of a few weeks or months. There are bound to be shallow critics who will denounce the necessary expenditure on research as a waste of money. When the machinery works smoothly, however, and provision has been made for Australia to benefit by the scientific research of other Dominions as well as her own, the material results will undoubtedly be such as to justify the expenditure.

The Prime Minister, Stanley Melbourne Bruce, a principal figure in the establishment of CSIR, is here seen opening the Australian Forestry School (now CSIRO's Payroll Office) in 1927.

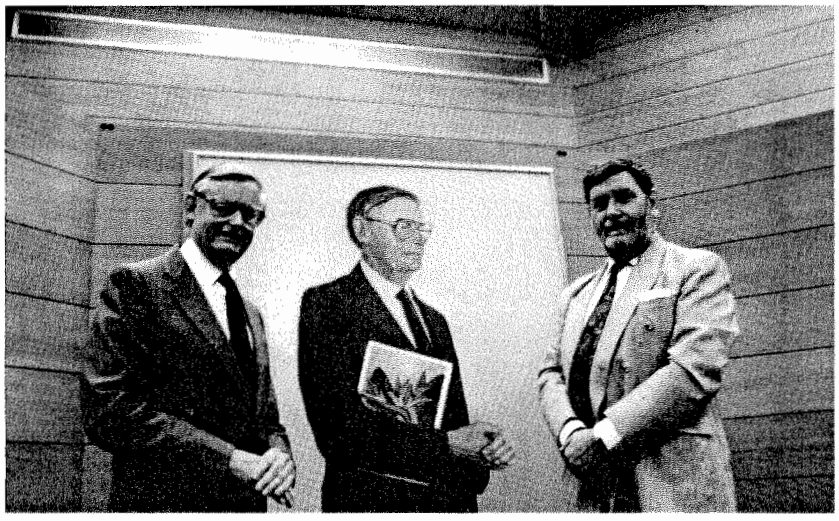
from the *Sun*, March 23, 1926...

SCIENCE AT FOURPENCE EACH

Can Australia, as a nation, afford to spend on scientific research a sum which would provide each inhabitant with one glass of beer a year? This is one way of putting the expenditure which Sir Frank Heath estimates as required when the scheme which he has recommended for the Commonwealth is in full operation. For the first year the sum of £40,000 would be spent, and for the second £50,000, but eventually the amount would rise to £100,000. And with the Commonwealth's present population of, roughly, 6,000,000, the sum of £100,000 is 4d a head.

The truth is that Australia cannot afford not to spend whatever is necessary within reason to encourage scientific research. Sir Frank Heath's proposals may need modification in details, and they certainly need amplification on one important point, that of securing greater publicity for the results of scientific work. In essence, however, the proposals are well-founded, and the expenditure proposed is very moderate in proportion to the results which should be obtained.

Keith Boardman joins gallery of CSIRO leaders



On Wednesday March 13 CSIRO's former Minister Barry Jones unveiled a portrait of CSIRO's former Chief Executive Keith Boardman. As is the CSIRO tradition, money for the portrait came not from the public purse but from the pockets of some of Dr Boardman's colleagues in the Organisation. It will be displayed, with those of other past leaders of the Organisation, on the top floor of the Corporate Centre in Canberra.

Archibald Prize winner Brian Westwood spent many sessions getting a feel for Dr Boardman's character and the historical significance of his scientific work before completing the painting.

Dr Boardman said he thought the real test of a portrait was whether someone who hadn't known the subject could get from it some true idea of character, and sometimes this didn't happen for many years.

Barry Jones praised the expertise of Brian Westwood in this respect. 'It's true,' he said, 'that his portrait of Malcolm Fraser, which was intended for Parliament House, was rejected by the subject on the grounds that it made him look remote, inflexible and humourless.'

But Mr Jones pointed out that the artist's portrait of Sir Warwick Fairfax had been a memorable feature of the recent *Four Corners* program on the collapse of the John Fairfax company.

Westwood is currently working on a series of portraits of veterans of the ANZAC landing in Gallipoli which will form an important part of the National War Memorial display.

Barry Jones spoke at some length of the days, not long gone, when he and Keith Boardman had worked closely together in the cause of Australian science.

Mr Jones characterised Dr Boardman as 'in some ways the quintessential back-room scientist, rather uneasy in the public eye, not entirely happy with the leadership roles that were thrust upon him. But for a shy person he was extraordinarily effective at networking. ...

'Somehow or other Government got the idea that the correct model for all public institutions was the corporation. I'm not sure what model they had in mind, whether it was the Bond corporation or perhaps Skase or one of the other great entrepreneurial high-flyers of the 1980s, but it was decided to convert the structure of CSIRO.

'I do think the Organisation, having gone through that period of trauma under Keith's very steady leadership is stronger, is better placed to operate selectively.'

[For an account of the years of Dr Boardman's leadership of CSIRO, see *CoResearch* No. 331, April 1990, pages 4 and 5.]

Health and safety manual released

You'll soon be getting yet another little booklet giving you the official line on how you should be conducting yourself during working hours.

But this one may have some real practical importance; it's about general and specific dangers in the workplace and how to avoid them.

It's been prepared by CSIRO's regional Health and Safety advisers, who have real knowledge of particular sites, and they'll be distributing copies to staff during the coming weeks.

The manual should help supervisors look after the health and safety of the people under them, but more importantly it should teach people enough about how to work safely that they won't need looking after.

The manual is divided into three main sections —

- a general section, with information on legislation, CSIRO policies and Health and Safety structures;
- a specific section, with information on hazards identified within a particular project. Typical entries in this section include thermal, biological , chemical, radiation and mechanical hazards;
- a section covering local Health and Safety requirements.

Speechless ambassadors

If you would quite like to help out with Project Ambassador, but you're shy, inarticulate, ignorant, or just plain lazy, why not take the easy way out and get your message across without saying a word? All of the tops shown above are decorated with an embroidered CSIRO logo, are good quality, and are reasonably priced. The models are, left to right, Nina Stahl, Gaye Weller and Sharon Woodward, all from the Division of Entomology, which is organising the offer. Prices may rise soon, but at they moment they are —

Item	Price	Colour
V-neck pure new wool sweater (middle)	$43	Red
Short-sleeved knitted polo shirt (not shown)	$29	Jade, red, white
Pure cotton sweat top (right)	$29	White, red
Pure cotton T-shirt (left)	$19	Jade, red, white

For more details contact your social club representative or ring Sharon Woodward on 06 246 4136 or Sil Runko on 06 246 4142.

New research Laboratory honours Les Bett

On March 13 the Division of Tropical Animal Production formally opened the Les Bett Research Laboratory at its headquarters at Indooroopilly.

The laboratory was named in honour of Mr Les Bett, a retired grazier who died last August having donated almost $3 million to sheep blowfly research during his life.

In the past five years he spent $800,000 backing research into a fly vaccine.

Mr Bett was formerly a part-owner of the giant merino property 'Portland Downs' at Blackall.

Dr David Mahoney, Chief of the Division of Tropical Crops and Pastures, said at the opening of the Laboratory that Mr Bett was dedicated to the sheep industry and had decided to back research to rid sheep producers of the blowfly menace, which is estimated to cost $150 million every year.

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Parliament told of CSIRO's greatness

Shadow Science Minister Peter McGauran delivered a long speech in praise of CSIRO to the Federal House of Representatives on Tuesday March 12, calling us 'a great organisation' that all Australians could be proud of. 'The future of CSIRO is secure,' he said.

The occasion of the speech was CSIRO's celebration of its 65th birthday at sites around Australia. (Note: there are various views on the question of when CSIRO's was 'born', and March 16 1926 isn't among them. The chosen 'birthday' is in fact a composite of a date in 1916 when Billy Hughes set up a 35-member Advisory Council of Science and Industry, and the year when the Council for Scientific and Industrial Research (CSIR) held its first official meeting.)

Mr McGauran told the House that CSIRO was 'pivotal to the environmental debate' since the idea of sustainable development could be made a reality only through the application of scientific knowledge. He mentioned as examples CSIRO's recent work on plasma arc technology, the Airtrak pollution detection system and research on factors affecting climate.

The work of CSIRO was also, he said, 'integral to lifting the competitiveness of Australian industry', citing Sirospun, which he said had 'revolutionised the production of fine quality woollen yarn and halved the cost of conventional processes'.

Mr McGauran went on to praise CSIRO's agricultural work. 'I do so unashamedly,' he said, 'particularly given the very proud and long association between the former Country Party, but now National Party, and the CSIRO.'

'CSIRO's efforts,' he said, 'have been instrumental in boosting the efficiency of plant and animal production in the rural sector.

'The organisation has led the world in developing new crop strains which are disease resistant and capable of flourishing in what were once thought to be hostile environmental conditions.

'CSIRO's genetic engineering research programs also serve to produce livestock which are highly fertile, less prone to environmental stress and capable of commanding higher prices in international markets.

'Its efforts to control cattle poisoning from plants and micro-organisms alone have saved producers $100 million annually.

'CSIRO's entomological and plant industry research programs have devised new ways of reducing the threats to primary industries posed by insects and other pests without recourse to the application of chemicals.

'CSIRO has increasingly turned to assisting farmers to overcome problems associated with land degradation and soil salination and acidification. CSIRO's land and water care research programs are designed to provide farmers with practical land management strategies which retain farm productivity whilst preserving and improving the quality of soils.'

Mr McGauran praised CSIRO for managing to balance commercial imperatives with strategic objectives. 'This balancing act,' he said, 'often delicate, consumes much of the time of CSIRO's leaders and, I might add, legislators. Much of the debate about the future directions of CSIRO centres on this very point.

'In a nutshell, the debate is: to what extent should we require CSIRO to maintain a body of knowledge upon which it and other researchers in Australia can draw, whilst at the same time tailoring its research to take up commercial opportunities?

'In recent times, under the strong and imaginative leadership of the Chief Executive, Dr John Stocker, I am confident that this balance has been about right.

'CSIRO has demonstrated its fierce determination to be at the cutting edge of science and technology. The organisation does not complacently shuffle along, like so many other government business enterprises, arrogantly assuming the taxpayer will fund its existence come what may.

McGauran said CSIRO generated a body of knowledge of wide public benefit, particularly when it came to the environment. This was an area, he said, where it could not be expected that industry linkages would be easily found. And neither could we depend on importing solutions to our environmental problems, since they were often specific to Australia.

But CSIRO, he said, had a long history of involvement in Australia's agricultural industries and this had given it an intimate understanding of environmental and climatic conditions.

'CSIRO alone,' the Shadow Minister said, 'is capable of marshalling the resources, the hard data and the human expertise to confront problems of this kind.

'It alone is capable of building practical solutions to issues such as land degradation, arising from years and years of steady deterioration.

'It alone has a tradition of scientific objectivity and good commonsense that makes it a trusted ally of primary producers and industries whose activities bear upon the environment in various ways. Its work on land care and water resources therefore are at the forefront of public policy in respect of the goal of sustainable development.

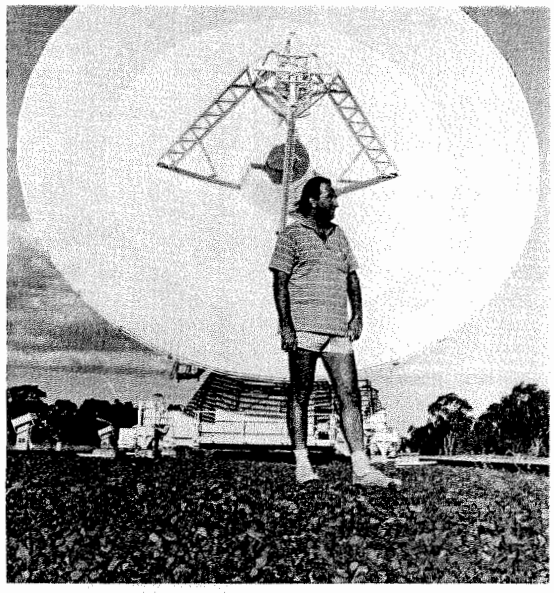
'The CSIRO will be the research agency to which governments will look to establish baseline environmental data upon which policy will be built.

'The organisation will continue to play the role of umpire between combatants in the debate between development and conservation — although we know that it should really be a debate over development and conservation, as neither objective is mutually exclusive. This is why government Ministers queue up to avail themselves of CSIRO's research capabilities.

'CSIRO's role in this regard is set to become even more critical.'

There was much, much more in the same vein, and Mr McGauran wound up his speech, which he said was not a eulogy, by wishing CSIRO a very happy 65th birthday and expressing confidence in its future.❖

Beam him up, Stocky!



Mr Dennis Allman, Site Services Manager at the Australia Telescope site near Narrabri, has won a CSIRO Overseas Study Award, one of only four awarded each year.

The award will allow him to visit the United States for three months at the end of this year, to study the maintenance and operation of telescopes similar to the Australia Telescope.

During his stay Mr Allman will work with his counterparts at the Very Large Array, a radio-telescope near Socorro, New Mexico. It is the telescope that most nearly resembles the Australia Telescope, which makes studying it a good practical proposition.

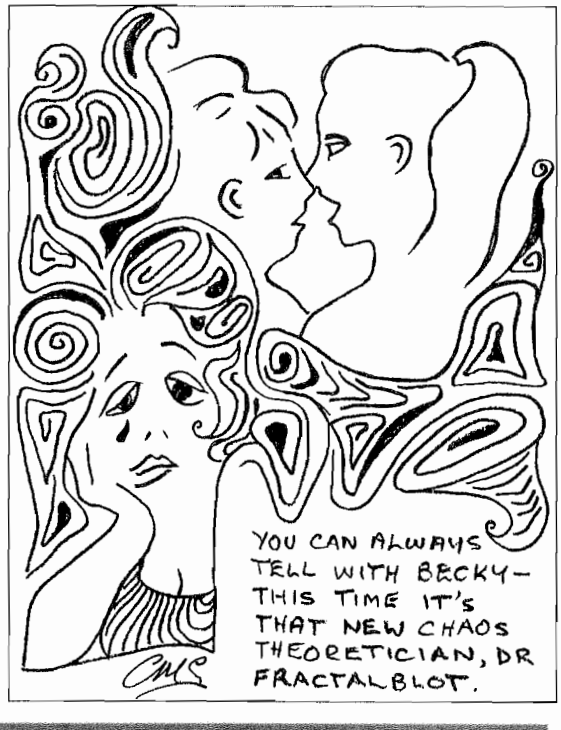
'As far as maintenance goes,' said Mr Allman, 'we want a short learning curve — this will save us time and money.'

He will also visit the Greenbank Observatory in Virginia and the Hat Creek Observatory in California.

The CSIRO Overseas Study Awards are intended to give staff the chance to extend their training and experience. They are granted annually, one each for the technical, trades, professional (non-research) and administrative areas.

The awards are tenable for between three and six months, and up to $20,000 is provided to cover air fares, overseas living allowances and tuition fees.

More information is available from Ruth Lancaster of the Employee Development Unit, on 06 2766 221.



Happy birthday to you, and you, and you ...

Ten years hard

March 16 was not only the 65th birthday of CSIRO, but Dr Angus McEwan's tenth anniversary as Chief of the Division of Oceanography in Hobart. On the afternoon of the 15th, a Friday, staff of the Division gathered to celebrate both events.

Chris Fandry, Assistant Chief of the Division, delivered a toasting speech. He recalled the moment ten years back when Angus McEwan had first encountered his 25 disillusioned staff, just formed into a Division in their own right and facing relocation from Sydney to Hobart.

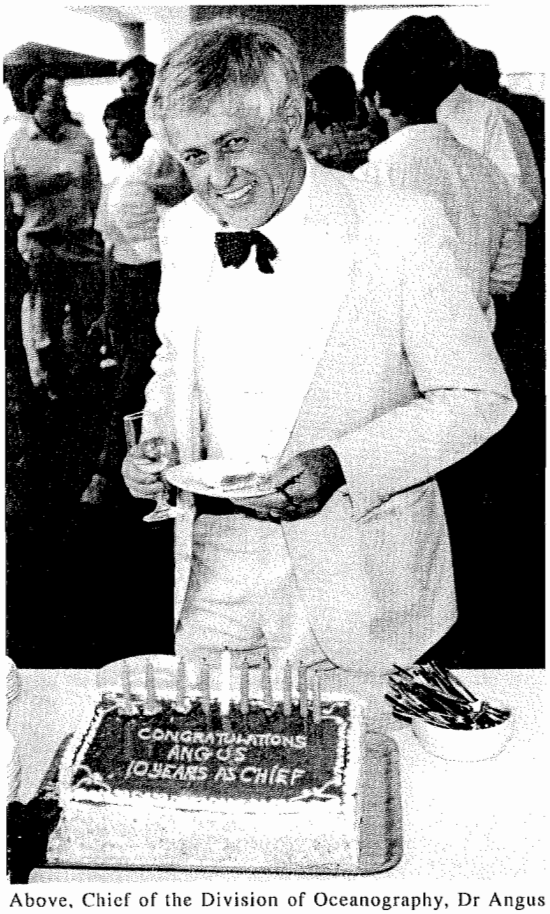
On top of the rapid-fire reviewing and restructuring assault that CSIRO as a whole has weathered in the past decade, he pointed out, the Division of Oceanography had had to establish a new identity in a new physical environment.

The fact that the 100-strong Division was now a coherent, progressive community must, he remarked, reflect on that decade's leadership.

But hard upon these gentle words another scientist, thinly disguised in laurel garland and plastic sword, leapt to centre stage, declaiming that the day was the Ides of March, when 'only brave or foolish leaders would dare to call their colleagues together —

Friends, CsiRomans, countrymen, lend me your ears,
I come to bury Caesar, not to praise him.
The science that men do lives after them,
Science management is best interred with their bones ...'

Dr McEwan confided that his initial hope as Chief has been that he might have more control over his time, to create more opportunity to do his own science.

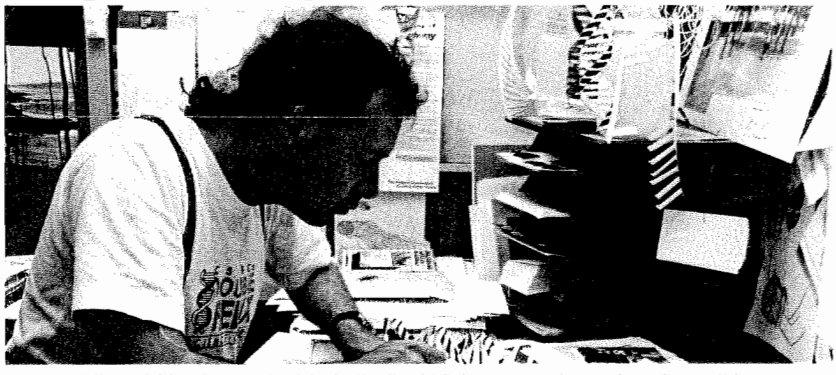


Above, Chief of the Division of Oceanography, Dr Angus McEwan, displays heroic contempt for the infamous Ides of March

CSIRO turns 65, all over

Above, Margie Enfield, Corporate Centre's Head Librarian, and Brian England, until recently John Stocker's Executive Assistant, jointly cut the first slice of CSIRO's 65th birthday cake, one of many being cut on Friday March 15 at sites around Australia. Dr Stocker, CSIRO's Chief Executive, performed the ceremonial slicing in Adelaide. Ms Enfield and Dr England were asked to cut CSIRO's Canberra cake because they too were celebrating their birthdays on that day.

Spiralling in on maturity?



Editor of CSIRO magazine The Helix, David Salt, prepares the coming-of-age edition

Break out the non-alcoholic champagne! Let the rafters ring till 8 pm. Roll out the platicised red carpet! With its most recent edition CSIRO's magazine for science-minded kids, *The Helix*, turns 21. Issues that is, not years. It's five years old, and walking tall.

To celebrate its coming of age *The Helix* has taken on a bolder and brighter image, going all out for visual impact, with every page in full colour, and many full to blinding, just the way kids like it.

The Helix is a brainchild of CSIRO's Education Programs unit. They figure if Australia is to become the clever county it's going to need a clever, science-literate population. They've been cultivating that literacy with a range of programs aimed at getting kids into science, and science into our day-to-day conversation.

Five years ago they started up the Double Helix Science Club, and since then the club has grown to become a real force in science education, with membership now topping 14,000.

As the official mouth-piece of the club, *The Helix* has grown with it, and is now a leader in its field. It has a circulation of 30,000, going out to club members, science teachers and high schools all over Australia.

The magazine involves its readers in experiments and offers an endless source of projects and avenues of investigation. It makes a point, too, of showing its young readers the wealth of possibilities for a career in science.❖

***CoResearch* is produced by the Public Affairs Unit for CSIRO staff and interested outsiders. Readers are encouraged to contribute or offer suggestions for articles. Stories may be reproduced, provided acknowledgement is given to both *CoResearch* and CSIRO. The deadline for contributions is the 15th of each month, but earlier is better, as issues fill up fast. Editor: Liz MacKay, PO Box 225, Dickson ACT 2602. Phone: 06 276 6567. Fax: 06 276 6641.**

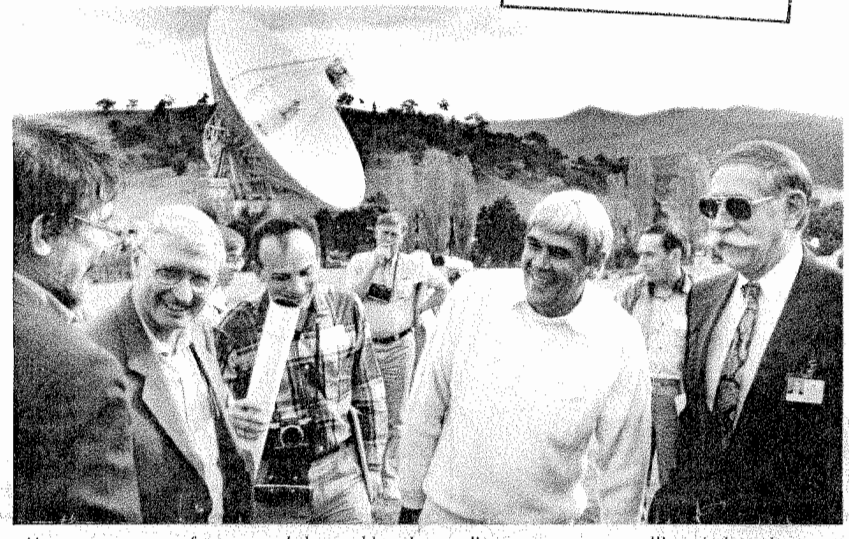
CoResearch

No. 340 May 1991 CSIRO's staff newspaper

CSIRO AUSTRALIA

Australia to play key role in finding answer to life, universe and everything

(Well, the universe, anyway ...)



Above, astronomers from around the world gather to discuss two space satellite missions that may radically change our picture of the universe by offering a view of objects and events in space hundreds of times superior to anything that has been possible before. In the background are, centre, Dr Sergey Shteinman, of the Lavochkin NPO, and right, Dr Atanislav Glazov, of the Space Device Corporation, both in the USSR. In the foreground, left to right, Dr Nikolay Nikolaev, Dr Nikolay Kardashev, and Dr Leonid Gurviz, all of the Astro Space Centre, USSR Academy of Sciences, in Moscow, Dr David Jauncey, Australia Telescope National Facility, and Dr Dick Colonna, the NASA representative in Australia. The picture was taken at Tidbinbilla, by CSIRO's John Masterson, while the group were touring Australia's telescope facilities.

During the week from April 22–26 more than 80 representatives from space agencies in a dozen countries, including the USSR, Japan, Sweden and Germany, gathered at the CSIRO Division of Radiophysics Laboratory at Marsfield in Sydney. The meeting was for detailed discussion of two international projects to put radio telescopes into orbit in the mid-1990s.

The two projects are Radioastron, co-ordinated by the USSR, and VSOP, a Japanese project. Australia is taking part in both.

The orbiting telescopes will link up with earth-based radio-telescopes to produce telescopic networks much more powerful than any one of the telescopes used alone.

The networks will be able to generate images hundreds, or even thousands, of times better than those the Hubble Space Telescope was to produce.

The pictures will be of especially active and interesting galaxies. Since many of these can only be seen from the southern hemisphere, Australian radio telescopes are crucial.

Australia will be providing CSIRO's Australia Telescope, a new antenna at Tidbinbilla near Canberra, a Tasmanian antenna run by the University of Hobart, and possibly some of OTC's antennas near Perth.

As well as that, Australian companies — British Aerospace Australia, and Mitec — are building one of the data receivers for the Radioastron satellite, giving them the chance to show that they can produce hardware fit for space use.

The technique involved in the new venture is called VLBI, or very long baseline interferometry, which offers the high angular resolution needed to obtain a clearer, more detailed picture of the universe.

VLBI uses radio telescopes spread across the continent or across the world, 'linking' them together to form the equivalent of a single giant radio telescope many thousands of kilometres across. This is done with high-speed tape recorders and atomic clocks.

In order to 'see' with better and better detail you need to go to shorter and shorter radio wavelengths and longer and longer distances between the telescopes.

But there's a limit to that, as the earth is only 12,000 kilometres in diameter.

So you need to get a radio telescope into space. And that's what's happening with Radioastron and VSOP.

The Soviet space telescope will fly very high — 80,000km — to get the highest possible resolution, while the Japanese one will only go to 30,000km.

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More on the project on page 6.

CSIRO supplies four new Academy Fellows

Four of the nine new Fellows elected to the Australian Academy of Science are from CSIRO.

The new Fellows, listed below, were elected at the latest Annual General Meeting of the Academy, held in Canberra on May 2.

Professor Adrienne Clarke, CSIRO Board Member and Director of the Plant Cell Biology Research Centre at the University of Melbourne. Professor Clarke has been a pioneer in the understanding of cell biology in plants, with early work in medical research including isolation of the pollen allergens in rye grass. She gained world-wide attention in 1986 with a series of discoveries on cell self-incompatibility in plants.

Dr Peter Hannaford, Chief Research Scientist at the Division of Materials Science and Technology. Dr Hannaford's contributions to the field of atomic spectroscopy are internationally recognised. His work has made possible much more accurate measurement of the abundance of several elements in stars.

Dr Bruce Hobbs, Chief of the Division of Geomechanics. Dr Hobbs is Australia's most prominent structural geologist and has performed innovative research and development work on the causes of rock deformation and movement within the earth's crust, including earthquakes.

Dr Shirley Jeffrey, marine biologist at the Division of Fisheries. Dr Jeffrey has gained international eminence with her innovative studies of a type of chlorophyll, called chlorophyll C, in ocean algae. She developed new methods, using chromatography, to detect chlorophyll C, which have revolutionised measurements of the distribution of algae in oceanography.

...

The other new Fellows of the Academy are Dr Ian Mackay, a Principal Scientist at the Centre for Molecular Biology and Medicine at Monash University; Dr Stjepan Marcelja, a Senior Fellow at the Department of Applied Mathematics at the Australian National University; Professor Geoffrey Thorburn, an Associate Dean of the Faculty of Medicine at Monash University; Dr Geoffrey Watterson, a Reader in Mathematics at Monash University; and Professor John White of the Research School of Chemistry at the Australian National University.

The Academy also elected four new Fellows to its governing council of 16, see page 2 — *Academy Council.* ❖

Above, Dr Adrienne Clarke, Member of the CSIRO Board, Director of the Plant Cell Biology Research Centre at the University of Melbourne, and now Fellow of the Australian Academy of Science.

With ambassadors like these, how can we lose?

John Stocker helps denude a self-shearing sheep at the Royal Easter Show in Sydney. Photo by Louise Lockley, Division of Biomolecular Engineering.

This month's column is going to be so much a matter of rapid-fire pats on the back to CSIRO staff that I've already booked a session with my doctor for advice on handling the excruciating bout of RSI I know must follow.

The first two salvos of back-patting go to separate groups of CSIRO staff with whom I've just had dealings in Hobart. The first is all those staff who are helping with Project Ambassador, in particular the recent Hobart Open Days, and the second is the Managers of our Science Education Centres.

The Open Days, presented at our Marine Laboratories, were the great public event of my Hobart visit, and I must say I was very impressed.

Apart from withstanding the onslaught of 1,500 school children — and withstanding it with grace and fortitude — the CSIRO staff were bursting with enthusiasm for the event. This glowed very brightly in the various 'show-and-tell' exchanges, but not only there. It shone through also in the careful preparations they had made to make sure the work was shown in the most stimulating and exciting way, and with demonstrated relevance to issues of importance to Australia.

These Open Days — together with what I saw of Biota late last year — have convinced me that the enormous amount of time and effort it takes to set up such events is time and effort well spent for CSIRO.

I heard from quite a few people within CSIRO, some from the Marine Labs and some not, that it had been their first real chance to get an overview of the work done in various parts of the laboratory, so I think open days also play quite an important role in internal communication. If you have to get your story in good enough shape for presentation to the outside world, it will also be clearer to your colleagues, and maybe even to yourself. I know I've often found it so.

Another recent blow struck for justice (to CSIRO) was our stand at the Royal Easter Show in Sydney, stage-managed by Patrick O'Neill with help from Jill Wilson, the State Co-ordinator of CSIRO Education Programs, Gary Lewis, also of Education Programs, and a host of helpers from the Double Helix Club and staff from all around the Organisation. This was a smaller display, of course, but it really seemed to me to form the most visible and enticing exhibit in the Technology Pavilion. If the proof of that pudding is in the eating, I can report a lot of loud lip-smacking, particularly amongst the generation that will provide our future funders.

Speaking of future funders, and future scientists, too, I also had a chance in Hobart to breakfast with an unsung but remarkably effective group — the people who run the CSIRO Science Education Centres in the various States. I think these Centres are one of our most important interfaces with the Australian public, and I saw tremendous advantages in the managers' taking the opportunity to get together and compare notes.

And there's another group in CSIRO which, though I could hardly call them unsung, usually attract dirty ditties!

I recently spent some time with Peter Langhorne and the senior staff of the Corporate Services Department at their annual planning session. Our main job was to work through the Department's objectives for the coming year, and of course we also looked back over the recent past.

One of the real difficulties for central groups in an organisation like ours is that the value they add is often not readily visible from the decentralised units. One of the points I impressed on Peter and his staff was that they must work out better ways to tell the organisation what they do, why, and how much it costs. It's fine to be the quiet achievers, but don't be totally inaudible.

Over the past year there have been several achievements from Corporate Services, I think, that have fallen well within the audible range. The most important has been award restructuring, which has restored CSIRO to a position of pre-eminence amongst research employers.

Then there were some new approaches to the investment of external earnings, which have enabled Divisions to earn up to $1 million extra last financial year, the helpful new CSIRO Data Book, the CSIRO Research Leadership courses, the installation of a new mainframe computer service to support our management information services, and the provision of streamlined and useable financial information for the Executive Committee and Board.

So although I am on record as supporting administration bashing as a natural and healthy acitivity for every red-blooded scientist, I must also declare a real sense of admiration for the achievements of Peter and his team in the past year.

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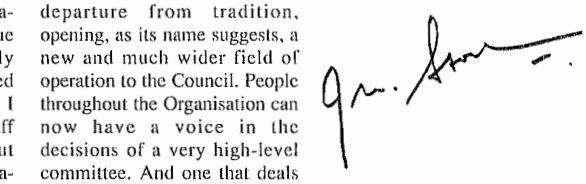
Another important event that took place during my visit to Hobart was the latest meeting of CSIRO's Consultative Council, which I have the privilege to chair.

The Consultative Council is CSIRO's main forum for consultation between management and staff, and at this meeting I was able to oversee some major changes to its structure. These changes are not merely administrative. They constitute, I think, a complete change of direction, and will move the Council towards becoming a much more powerful voice for industrial democracy in CSIRO.

The Council is no longer dealing merely with the day-to-day staff issues that have made up its traditional bailiwick, but with major issues in the Organisation.

The Council now has three sub-committees, one dealing with training and development, one with human resources policy, and one with organisational policy and communication. It is the last of these three that offers the most exciting departure from tradition, opening, as its name suggests, a new and much wider field of operation to the Council. People throughout the Organisation can now have a voice in the decisions of a very high-level committee. And one that deals with the CSIRO Board not through intermediaries, but face-to-face.

The new sub-committee has already set itself some tasks, among them writing an article for *CoResearch* readers on the implications of the recent priority-setting exercise, working out a clear CSIRO policy and strategy on internal communication, and making sure that all staff training courses include something on communication skills.



Academy Council

The Australian Academy of Science has elected four new members to its ruling body of 16, the Council, from among its Fellows.

Dr Garth Paltridge used to be a Senior Principal Research Scientist at the Division of Atmospheric Physics in Victoria, but left to become Director of the Institute for Antarctic and Southern Ocean Studies at the University of Tasmania.

Dr William Blevin is Chief of the Division of Applied Physics in Sydney.

Dr Jan Anderson is a Chief Research Scientist at the Division of Plant Industry in Canberra.

Professor Douglas McCloskey is Head of the School of Physiology and Pharmacology at the University of New South Wales.

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Sir Ian McLennan Achievement for Industry Award

It's that time of year again, when nominations are called for the Sir Ian McLennan Achievement for Industry Award.

The Award goes to CSIRO scientists whose achievements have been of benefit to Australian industry.

Winners are given a grant of up to $10,000 for an overseas study tour related to their achievement. They are also presented with the Sir Ian McLennan Medal at a lunch-time ceremony, which this year will take place in Sydney.

In these cost-cutting times the Award should be quite a help to those trying to catch up with overseas developments, or to increase even further the returns on their development in this country.

Last year's joint winners were Dr Graham Price, of the Division of Geomechanics, for his solutions to problems with foundations of off-shore gas platforms, and Dr Bill Denholm, Division of Mineral and Process Engineering, representing the SIROSMELT development team.

Brochures explaining the conditions of the Award and how to apply have been sent to all sites. The closing date for nominations is 30 June 1991 and the winner is expected to be announced in October.

More details can be had from Ms Karen Robinson, CSIRO Public Affairs, PO Box 225, Dickson, ACT 2602; phone 06 276 6108 or fax 06 276 6641.

Letters to the Editor

Dear Editor,
CSIRO scores 15 out of 15 CRCs, but Western Australia scores none. This should come as no surprise as, historically, WA has been a very poor cousin in the distribution of Commonwealth research monies. Despite having 10% of Australia's population, Western Australia receives only 4.1% of Commonwealth funding for R & D and 4% of CSIRO's staff.

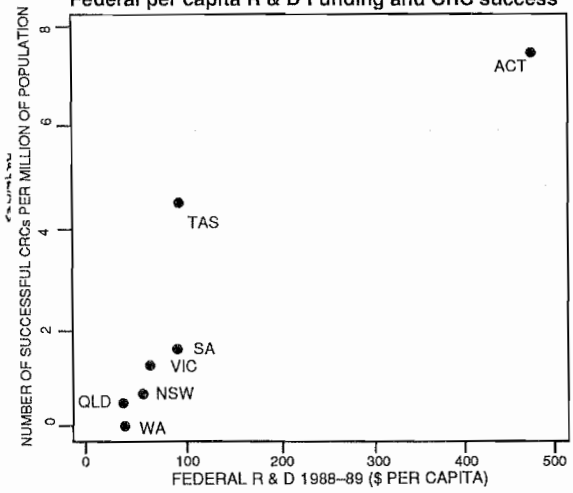
In comparison with Western Australia, which received in 1988—89 $22.30 per capita of Commonwealth R & D funding, South Australia received $79.10, Tasmania $90.10, Northern Territory $75.30 and the ACT $475.80. Queensland received less at $21.70 per capita but has nearly twice the population of WA and is less isolated from the main intellectual centres.

This lack of funding has over the years led to a serious loss of talent and a lack of the prominent scientists required by the CRC committee for a successful submission. The CRC process confirms or is even exacerbating this bias (see diagram below).

The history of poor funding bears little relation to economic productivity, as the Western Australian economy provided, in 1988—89, 20.4% of Australia's foreign exports ($8.9 billion), 16.1% of Australia's agricultural output ($3.7 billion) and 25% of Australia's mineral, oil and gas output ($6.3 billion) and 7% of manufacturing output ($9.4 billion). WA contributes positively to Australia's foreign trade, consuming 7.6% of Australia's imports ($3.6 billion) but producing 20.4% of our exports ($8.9 billion), which is in contrast to Australia's overall trade deficit. There are urgent needs for research to sustain this economic performance, if WA is not to end up as the dust bowl of Australia. CSIRO and the Commonwealth Government should act now to redress rather than entrench past funding inequities.

Richard Smith
Division of Exploration Geoscience

Federal per capita R & D Funding and CRC success



Dear Editor,
Recent issues of CoResearch announced the demise of the DSIR in New Zealand and also the 65th birthday of CSIRO on March 16.

I hope the passing of CSIRO is not imminent. Such a sad event would be more likely to be deferred indefinitely if the public at large could get a better, perspective view of CSIRO's many achievements over many years. Some of them still continue to have a major influence on the economy of Australia.

Moreover, present and former staff of CSIRO interested in taking an active role in Project Ambassador to promote CSIRO as an organisation vital to Australia would be better able to do that if they had easier access to a perspective view of the Organisation's history, ethos and achievements.

When then can we expect to see a published history of CSIRO to complement C.B. Schedvin's 'Shaping Science and Industry' — the history of CSIR from 1926 to 1949?

Bunny Fennessy
Braddon, ACT
[formerly of CSIRO]

I had my answer all ready for Mr Fennessy when he spoiled it by writing again to let me know he had already found out what I was going to tell him! In case others are interested, Professor Boris Schedvin is working on the second volume of his history of CSIRO. The period to be covered is still under discussion, but at the moment looks like being from 1949 to 1976.—Ed.

Warming up the wool market

Celebrating the Australian launch of CIBAFAST W at the Australian Wool Corporation headquarters, left to right, Erwin Brenzikofer, Divisional Manager, CIBA-GEIGY, Stuart McDiarmid, Business Manager, Wool and Carpets, CIBA-GEIGY, and Ian Leaver, Principal Research Scientist, CSIRO Division of Wool Technology, Melbourne Laboratory.

On February 19 a new wool product was launched by CIBA-GEIGY Australia Ltd. It is the final outcome of research begun in 1977 by CSIRO's Division of Protein Chemistry.

The product is called CIBAFAST W, and it is an innovative compound that promises to pep up our ailing wool market by making wool more colourfast and resistant to the effects of light.

Of the 40-odd compounds CSIRO synthesised and tested, two showed promise.

At this point, in 1984, the International Wool Secretariat took on the commercial assessment of these compounds, and, three years later, set up a joint testing program with CIBA-GEIGY (Switzerland) to identify which would be the more suitable for commercial exploitation.

The Australian launch of the new product, held at the headquarters of the Australian Wool Corporation, was attended by representatives of CSIRO, the Wool Corporation, CIBA-GEIGY and the transport, textile and chemical industries.

The CSIRO people involved in the basic research behind CIBAFAST W were Dr Neil Evans (now at the Wool Corporation), Mr Ian Leaver (Division of Wool Technology, Melbourne Laboratory), Ms Judi Rosevear (retired), Mr Peter Waters (Leather Research Centre, Clayton) and Dr Jack Wilshire (Division of Biomolecular Engineering). Contributions were also made by Mr Leo Holt, Dr Rob Marshall, Dr Brian Milligan (retired) and Mrs Jenny Saunders (Division of Wool Technology, Melbourne Laboratory.❖

Speaking of Project Ambassador, a lot of staff still don't realise that there are kits you can use to make giving speeches about CSIRO a lot easier. They are available from the Public Affairs Unit in Canberra and consist of a set of slides (with notes) and a few small publications you can use as quick cribs. These include CSIRO's *Contribution to the Nation*, the *Project Ambassador Information Campaign* handbook and a couple of other bits and pieces. The information they give is brief but up-to-date, and will certainly give you all you need for most encounters. Contact Sue Kingsland on 06 276 6108.

A Matter of Opinion

This month's opinion comes from Dr Brian Lowry, a Principal Research Scientist with the Division of Tropical Animal Production in Townsville.

Of late the phrase 'clever country' has been invoked fairly frequently in news concerning CSIRO. I have been quite interested in its application in another area, but one in which it seems we have a long way to go. The experience is best recounted in diary form.

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8 March 1990. It was the 1990 federal election campaign, but in North Queensland we were more conscious of Cyclone Aivu hanging around. However, the whole family happened to be within sight or sound of the TV when the PM delivered the government's education policy. There was talk of the 'clever country'. Fair enough, long overdue. Then (What was that? Did you hear that?) a specific promise to introduce a prize for Year 12 students. A $2,000.00 prize, no less, and 500 of them throughout Australia. With one of the family looking to perform creditably in Year 12, here was something of more immediate interest than one expected.

April, on. The year went by and there was no further whisper of it. No announcement within the school of a possible glittering prize. Cynically, we assumed that if the promise was implemented it would be just in time for the next election.

Come October, I happened to be in conversation with the headmaster. Had he heard of a Commonwealth award for achievement in Year 12? Never. Did not remember the election promise. One would have thought that there might have been a slight professional responsibility to keep track of such things, but no matter.

December. The total blank made me write to the local federal member, the Hon. E. Lindsay, to find out whether I had been hallucinating on the whole thing. Prompt reply, enquiry passed on to John Dawkins' office. Fair enough.

End of school year, speech night. Lots of talk of achievement but recognition of winners has to be egalitarian, so there is nothing as abrasive as naming the top academic performance, although they don't mind naming a Student of the Year based on social criteria. No mention of the Commonwealth maybe recognising the top performers, that year or in the future.

The TE scores come in, each released as a secret triumph, or otherwise, as the the case may be. No publishing a list of the 990s. Maybe it would make the others feel bad.

Early February, 1991. Reply from Minister Dawkins office, via Hon. Lindsay. It seems we were not hallucinating. The award exists and is called the Australian Students Prize. There are indeed to be 500 prizes worth $2,000.00 each. Not only does it exist, but it is being implemented for the previous 1990 school year. They are consulting with each state on the results from 1990. Winners expected to be decided in March.

One calls up the headmaster again. What is happening? What inputs have they had? Total blank, with school and education department locally. Someone vaguely remembers a circular last year (Who filed it? Where did it go?) but anyway no one takes any notice of election promises. Does this mean NQ students are not in the draw? At least in a lottery you know whether you are in it or not.

April, 1991. The ASP takes on more tangible existence with a nice letter from Mr Dawkins to the ex-Year 12 member of the family. How many of the 500 letters have arrived a a total surprise to the recipients? It seems there is to be an official launching and presentation in Canberra next week.

The week passes. The only news in the media concerning Mr Dawkins is obsessive analysis of something he might have said that might mean a cabinet rift and which will be forgotten by the time anyone reads this. A substantial initiative in education, the surprise and delight of the 500 top students, perhaps the start of a new trend towards rewarding achievement — not a whisper of that. One assumes the presentation did indeed take place but have no way of knowing.

Wednesday 10 April. The Australian publishes the names, all 500 of them, in a solid block of microscopic print with no explanation or accompanying story.

•••

So far the school has not told this year's Grade 12 of the existence of the award.
I am totally baffled.
First, by the apparent failure of many individuals with a potential direct interest to follow up a specific election promise. Second, the apparent indifference or ignorance of the teachers and schools. Third, by lack of press enquiry or reporting on this initiative, even after the event. Are there anti-elitist attitudes that have contributed to the apparent silence on the award? Is not this something for the press to investigate? Or is the obsession with doom and gloom on the economy such that the media do not want good news?

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Caption competition time!

Nearly everyone responded alcoholically to the request in CoResearch No. 335 for a caption to the above photograph of Simon Crean, Dennis Cooper and Trevor Bird, with feedhorns for AUSSAT B, at the Division of Radiophysics site at Marsfield. The winner is Jeff Kingwell, of COSSA, with 'OK, who's the fool who stapled the wine goblets to the cheese tray?'

Runners-up
Laurie Noyes, from the Division of Geomechanics — 'Send him back for another round, but this time don't let him drink the lot.'
Paul Daniel, Division of Water Resources — 'Ah! Refreshments. Thank you, Simon. Mind if I try the red?'
Doug Milne, Australia Telescope National Facility — 'Would you care for a glass of the corporate punch sir?'
Colin Wrigley, Division of Plant Industry — 'I know it's good basic research, but I don't think there's a market for titanium ice-cream cones.'
— and an unfortunately anonymous entry totally different from all the rest — 'Well, maybe with a padded seat!'

Now try your hand at the one below ...

Photo by Louise Lockley, Division of Biomolecular Engineering

National Forum on Plastics and the Environment

A national forum on the impact of plastics on the environment will be held from 22–23 May at the World Congress Centre in Melbourne. It is jointly sponsored by Monash University, the Plastics Industry Association, and CSIRO. The cost is $275 and enquiries should be directed to Ms Leanne Carnell, Montech Pty Ltd, Monash Science Park, Ground Floor, Building 2, Cnr Blackburn Road & Martin Street, Clayton, Victoria, 3168, or phone 03 558 6222 or fax 03 558 6589.

Childcare update

Building is well under way on the child-care centre at CSIRO's Black Mountain site in Canberra, and they should be opening their doors in mid-July this year. The waiting list is now open. Contact Elizabeth Brooks of the Division of Entomology on —
06 246 4124

Colman and BRI make it official

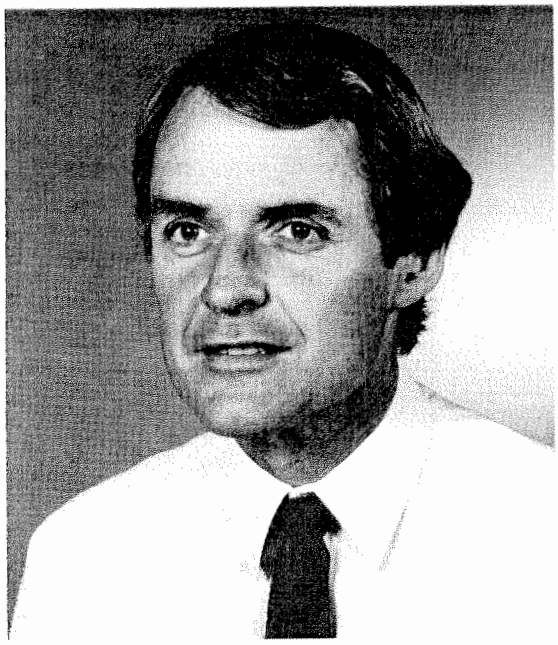


Photo by Leona Monarch, Division of Biomolecular Engineering
Portrait Peter Colman

Dr Peter Colman has been appointed Director of the newly formed Biomolecular Research Institute. Dr Colman, who is the Chief of the CSIRO Division of Biomolecular Engineering, has been the Interim Director of the BRI since its formation in late 1989.

The BRI is a joint initiative of CSIRO and the Strategic Research Foundation, a body funded by the Victorian Government. It is structured and managed as an independent research institute but is prepared to make its facilities available to other research institutions, and to the private sector, through collaborative projects.

The Institute's first target will be the pharmaceutical and health-care industries. It will provide state-of-the-art facilities for making images of macro-molecules like proteins, virus particles and genes. This will help scientists determine the relationship between structure and function in biological systems.

This information can then be used in the rational design of pharmaceuticals and biological control products.

In the early stages research will focus on the discovery of novel anti-viral compounds through the investigation of virus biology and structure.

Part of the BRI's strategy for commercialising the science and technology it develops is to forge agreements with industrial partners who are able to maximise returns to the Australian economy. Already the Institute has established commercial relationships within the pharmaceutical industry, and AMRAD and Glaxo (Australia) have representatives on the BRI Board, which is made up of leading members of the medical research and industrial communities.

Dr Colman, who joined CSIRO in 1978, is an internationally renowned expert in the field of protein structure. He received his doctorate from the University of Adelaide in 1969, and worked in America and Germany before returning to Australia. From there on his list of credits is impressive.

He won the inaugural Frederick White Prize of the Australian Academy of Science in 1984, the inaugural CSIRO Medal for Research Achievement in 1985 and the Royal Society of Victoria Medal in 1986. In 1988 he was the Lemberg Medallist and Lecturer of the Australian Biochemical Society and in 1989 was elected a Fellow of the Australian Academy of Science.

As Chief of the Division of Biomolecular Engineering he leads a group of about 180 staff in laboratories in Parkville and North Ryde. The Division studies molecular structure and function in biological systems, exploiting those aspects that are relevant to the development of Australian pharmaceutical, health-care, and biotechnology-based industries.❖

WARSIDEC gets the green light

Well, Western Australia didn't score in the CRC stakes this time round, but CSIRO's Division of Exploration Geoscience is set to be a major player in a new scientific initiative in that State nevertheless.

West Australian deputy premier Ian Taylor announced that Cabinet has given the go-ahead to a detailed planning and design study for the establishment of a remote sensing centre in conjunction with CSIRO — the Western Australian Remote Sensing Industry Development and Education Centre, or WARSIDEC.

Mr Taylor said that Western Australia was tooling up to exploit the multi-million-dollar world market for remote sensing products.

'Sophisticated remote sensing technology has been vital for mineral exploration, agriculture, fisheries and land and environmental management,' he said.

'The establishment of the Remote Sensing Industry Development and Education Centre will provide an opportunity for industry to co-locate with CSIRO at its Floreat Park Laboratories and take advantage of the substantial commercial opportunities in remote sensing in Australia and overseas.

'By 1994, the world market for remote sensing is estimated to be worth $2.6 billion.'

Federal Minister of Science and Technology, Simon Crean, said he was delighted with the progress towards the development of the centre. It would, he said, stimulate education, research, product development, marketing skills and commercial applications that would not only support the industry here in Australia but would also capture international markets.

The development follows on a memorandum of understanding signed in 1988 by the Premier of Western Australia and the Chairman of CSIRO.

Cabinet has now approved funding of $280,000 to pay for detailed design drawings for contruction tenders. The building program will cost around $5.5 million, but should yield a commercial return from tenants' rents over an 18-year period.❖

Above, Federal Minister for Science and Technology, Simon Crean, has a go at some not-so-remote sensing. The picture was taken by Garry Brown of the Division of Plant Industry during the Minister's visit to that Division on April 8. Left to right, Dr Allan Green, Richard Eckersley, Mr Crean, Dr John Begg and Dr Jim Peacock, Chief of the Division. Mr Crean is sniffing Linola oil, and holding in his hand some Linola seeds.

'Linola' is the trademark name for a new top-grade polyunsaturated edible oil with worldwide potential, evolved by Plant Industry researchers from the unglamorous industrial product, linseed oil. Products made with Linola should start appearing on supermarket shelves in early 1993.

Gibson to head Sirotech

On April 21 CSIRO's Chairman, Neville Wran, announced the appointment of Dr Don Gibson as Chief Executive of Sirotech Limited. Dr Gibson will take up his appointment on June 11 this year.

Sirotech Limited is a wholly owned subsidiary of CSIRO. Its function is to help with the transfer of the Organisation's research results to industry.

'The appointment of Dr Gibson as Chief Executive completes a program of restructuring which has seen the Boards of Sirotech and CSIRO merged and the activities of Sirotech and CSIRO more closely integrated,' Mr Wran said.

In making the announcement Mr Wran said that Dr Gibson, who is currently Chief of the Division of Building, Construction and Engineering, will bring to the position extensive experience in research management and an excellent background in the successful transfer of technology to industry. Dr Gibson will become a member of the CSIRO Executive Committee chaired by CSIRO's Chief Executive Dr John Stocker.❖

CSIRO's iron man

Mick Crowe, of the Division of Forestry in Canberra, has qualified for the gruelling World Championship Triathlon in Hawaii to be held in October.

At 42, Mr Crowe is the oldest member of the ACT Heart Health team.

10 years ago

From the Chairman — A regular column by the Chairman of CSIRO Dr. J. Paul Wild

The official title of the Razor Gang's activities is the Review of Commonwealth Functions. The Government's decisions based in this review were announced by the Prime Minister on April 30th.

The most serious consequences for CSIRO are that we share in the across-the-board decisions to cut staff ceilings by about 2% (a cut of 132 positions in our case) and to limit next year's operating funds to the same money amount as this year (i.e. a real cut of 10—12%) unless special arguments can be given. The political climate is such that no amount of protest, argument or lobbying will alter these decisions which have been made with a kind of evangelical fervour based on political conviction and ideology.'

— *CoResearch* **No. 240, May 1981**

20 years ago

'It is a truism to say that we are living in a world of change. But in no area has this statement greater validity than in science and technology, where every advance contains within itself the seed of further change,' the Chairman, Dr J. R. Price, said in Melbourne last month.

Dr Price was addressing the Royal Society of Victoria on the role of CSIRO in the seventies.

...

'But,' Dr Price said, 'I believe that we must be able to change direction rapidly when the pressure is on — that is to say when a change in public needs which can be met in part or in whole by scientific effort becomes evident.

...

'This is not to suggest a capricious will-o-the-wisp pattern of research but rather a quicker recognition of those areas where science and technology can help, followed by a re-allocation of priorities and thus, a readier deployment of resources to those areas.

'The pattern of research you will see in CSIRO will be very different by the time this decade is over.

...

'Consequently, I can say with confidence that the seventies will see the growing importance in CSIRO of research for the minerals industry.

'But the real challenges facing Australia today are the numerous aspects of what we call environmental quality.'

— *CoResearch* **No. 146, May 1971**

30 years ago

Sir David Rivett, formerly Chairman of the Council for Scientific and Industrial Research, died on 1st April, 1961, after a long illness. The Prime Minister, Mr. Menzies, on hearing of his death said "David Rivett was one of the great Australians of our time. He combined an absolute first-class mind and great scientific attainments with a generous outlook and a quiet but pervading enthusiasm. Scientific research in Australia owes a great deal to him."

Sir David was born on 4th December, 1885, at Port Esperance, Tasmania, and was educated at Wesley College, Melbourne and at the University of Melbourne. He was Victorian Rhodes Scholar for 1907.

— *CoResearch* **No. 26, May 1961**

Call for proposals

Once or twice every year former chairman of CSIRO Sir Frederick White, and his wife Elizabeth, provide money for conferences to be organised through the Australian Academy of Science.

The conferences cover the physical and mathematical sciences related to the solid earth, the terrestrial oceans, the earth's atmosphere, solar/terrestrial science, space sciences and astronomy.

The Academy is now calling for proposals for the 1992 Elizabeth and Frederick White Research conferences, and nominations close on July 31 1991. For information contact Faye Nicholas on 06 247 5777.

Sharing our space

(continued from page 1)

Page 1 carries a brief account of a recent international meeting held in Sydney to decide details of the Radioastron and VSOP space satellite missions. Since this is genuine world science, CoResearch thought readers might be interested in how some of the scientists themselves felt about the initiative, and did a bit of a ring-around to find out. On the whole, they're thrilled at the prospect.

Dr Raymond Norris, a Principal Research Scientist for the CSIRO's Australia Telescope, said, 'We can potentially play a very important part in this, because to make these very high -resolution observations you've got to have decent radio telescopes on the ground. And that's something that we obviously have in Australia.

'These satellites will spend half their time observing the southern skies, and there's lots of exciting astronomy to be got out.

'Of course the Russians and Japanese are very keen to use our ground telescopes, so we have the opportunity to be equal partners in what is an enormous project. There's no way, clearly, that we can afford to put up these spacecraft. That's why we're so excited about it.

'By a relatively small investment we open up the possibility of doing some absolutely front-line research — to look at the sky with the highest resolution that Mankind's ever had!'

Dr Norris also pointed out that whenever a new way of looking at the sky had been used in the past it had led to the discovery of things that could not have been guessed at with existing data.

He said there were some specific objects astronomers were very excited about, for example, the 'cores' of active galaxies and quasars — 'galaxies right out at the distant corners of the universe'.

'There's a lot of evidence,' Dr Norris said, 'that black holes — objects which are radiating an enormous amount of energy, much more than the whole of our galaxy put together — are in the centres of these.

'It's where space and time get sort of ripped, in the region of a black hole. Very strange things go on in there.

'It's a very exotic area of physics, an area you can't test adequately at all on earth.

'We've got this circumstantial evidence that these things are out there, and when Radioastron and VSOP go up [in 1994 or 5] we'll get the sort of resolution we need. We'll get down to the sort of size where we can see the stuff falling into the black holes, if indeed they are there.'

Dr Norris said scientists might be able to determine the role the black holes were playing in galaxies and quasars, perhaps even in the formation of galaxies, a process as yet not known.

The visiting scientists were full of praise for the Sydney meeting, agreeing it was the best-organised of its type they had attended. (Meetings on the projects are held twice a year, but this is the first one to be held in Australia.) Dr Richard Schilizzi, of the Netherlands Foundation for Research in Astronomy, said a lot of people must have put a lot of thought into how things would run.

He said everyone involved in the project was confident of getting better images than ever before with the new satellites.

Dr Schilizzi, like Dr Norris, expressed a strong interest in 'getting down close to these mythical black holes in the middle of the galaxies.'

'Here in the southern hemisphere,' he said, 'there's a good chance of getting quite close to Centaurus A, and of course you don't know what you're going to find.

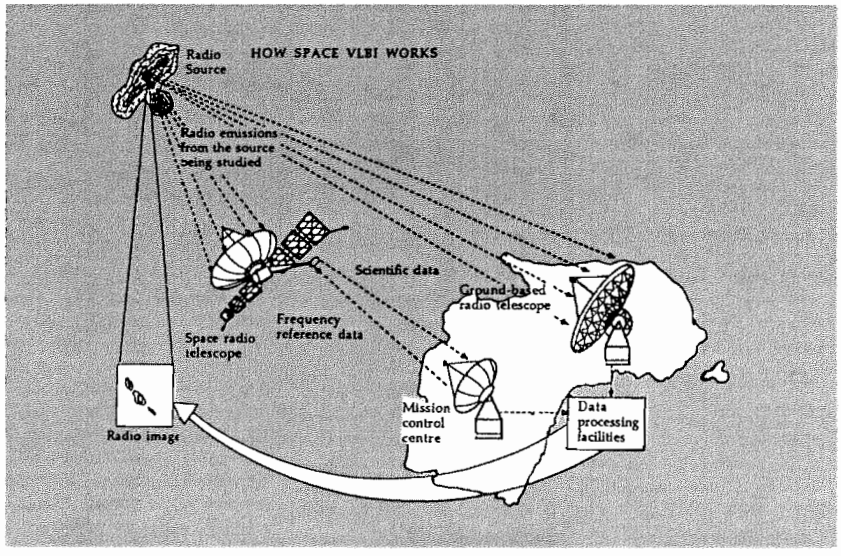
'Once you take a step like this, in the dark, you're always hoping that you'll find something new.'

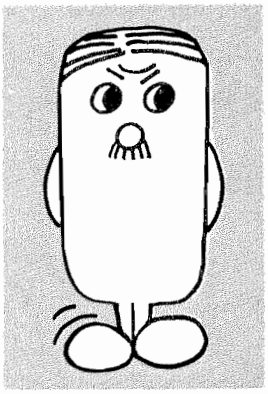
Dr Schilizzi said that observatories around the world were all very similar, though there were differences in style, and of course the ones in the Soviet Union didn't have as much equipment as some others.

'However,' he said, 'I think more brain power is used there to good effect.' Asked if he thought that people starved of equipment were forced to make more use of their brains, he said he thought that was probably what happened.

Dr Leonid Gurviz, the Scientific Secretary of the Astro Space Centre in Moscow, said that for him, and for most of the Soviet delegation, it was a first visit to the southern hemisphere, which he said held great interest for all of them because of the many famous phenonmena in our skies, and because they knew that radio astronomy was very strong in this country. He praised the friendly climate of the Division of Radiophysics and the Australia Telescope.

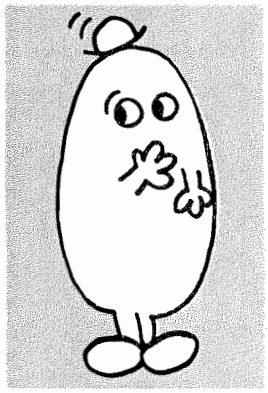
Dr Roy Booth, of the Onsala Space Observatory in Sweden, said he thought the meeting had put the programs into a clearer perspective than ever before and tackled some of the harder issues of scheduling and priorities for the first time.❖





Performance Planning and Evaluation

The wheels of progress, and how to ride them



A new method of assessing the work of CSIRO staff members comes into force on July 1 this year — Performance Planning and Evaluation, or PPE, to its friends. Below is a brief account — based on information supplied by the Human Resources Branch — designed to give CoResearch readers a glimpse of what's in store ...

The CSIRO's new Performance Planning and Evaluation program aims at top-quality work, including leadership, linked to improved career planning and development.

The system will follow a yearly cycle, with the appraisal period beginning in May and winding up in June the following year. Here's how it goes.

Stage 1

—setting the performance objectives and the development plan

You begin by listing your job responsibilities on the PPE form and giving it to your manager. The two of you then get together for a formal planning discussion with specific tasks.

•**Working out a personal development plan.** This is to give you and your manager a basis for career planning and development activities. You simply write down your career preferences and your development and training priorities.

•**Clarifying work activities and responsibilities.** You do this by writing down your broad functions, your work activities, and your areas of responsibility within your program. These will, of course, be related to the program objectives, so this is the time to clarify these with your manager.

•**Setting work objectives.** This is to make sure you and your manager have the same idea about exactly what work you are to get done during the appraisal period, and how that work will be evaluated. That is, which activities are the key ones on which your performance will be judged; your work objectives should be specific about both the quantity and the quality of the results expected from you in key areas of the job.

•**Recording your 'competencies'.** This simply means copying in the 'competencies' that are listed as expected at your classification level. The question of whether they actually match your real skills doesn't arise until assessment time. ['Competencies' are still something of a mystery to most staff of CSIRO, but you will have them in time for your first PPE sessions. In the meantime, they could be roughly described as combinations of skill, knowledge and aptitude, as opposed to qualifications. Problem-solving ability, for example, will be one of them, and a CSOF 2 would be expected to have a lower level of that ability, or competency, than a CSOF 3. They will be an important part of your assessment for promotion, and *CoResearch* will carry an article soon on this part of the new system.]

You can take a colleague into this first formal session if you feel uncertain of handling it on your own.

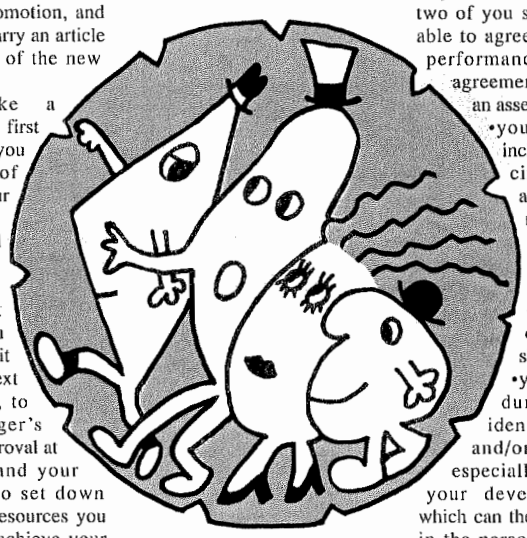
When you and your manager have agreed on all this and written it down, both of you sign the form and it is sent off to the next level up, that is, to your manager's manager. With approval at that level, you and your manager can also set down extra training or resources you feel you need to achieve your work objectives.

It's not set in concrete, however. The work objectives and the personal development plan can both be modified during the appraisal period, though all such modifications should be endorsed by the higher level manager. And that higher level manager is also the one who steps in to mediate if you and your manager disagree on what you should write into your PPE agreement at that first meeting.

Stage 2

—continuing performance review and feedback

This stage goes on for the whole evaluation period, that is, all year. The point of it is to make sure that managers have frequent communication with staff members. Your manager should provide you with continuous feedback, monitoring your progress and giving you the encouragement and the support you need to achieve your objectives and improve your skills. You and your manager should both keep a 'significant events diary' to try to make sure neither of you falls into the trap of remembering what you want to remember or of forgetting things that happened a long time ago. It's all too easy to let this week's triumph or disaster overshadow the rest of the year's work.



Stage 3

—completing the appraisal

Like Stage 1, this stage is a meeting between you and your manager, and again, you can have a fellow worker with you if you want to. If the manager has been doing his or her job there shouldn't be any surprises at this meeting, since you'll have been getting continuous feedback on whether your work was satisfactory or not. You should prepare for the meeting simply by summarising your achievements over the year.

This formal appraisal discussion focuses on a comparison of your achievements and performance with the objectives and competencies you wrote down at the first meeting, or as modified by both of you during the year. There may also be important achievements that are not on that original agreement but should be considered nevertheless.

Your manager should prepare for the discussion by —

•looking back over the achievements noted in the significant events diary;

•if necessary, seeking relevant information from other sources; and

•trying to anticipate what concerns you might want to bring up about your career development and what planned activities for the unit might affect your next appraisal cycle.

By the end of the meeting the two of you should have been able to agree on your overall performance, and this agreement should include an assessment of —

•your achievements, including any special circumstances that affected whether or not, or how well, you managed your agreed work objectives;

•the level of competencies you showed; and

•your development during the period, identifying strengths and/or weaknesses, especially with an eye to your development needs, which can then be incorporated in the personal development plan you prepare at the beginning of the next appraisal cycle.

When you have agreed on all this, your boss will summarise your overall level of performance as 'very good', 'satisfactory', 'fair' or 'deficient'. If appropriate, he or she can then recommend merit rewards and, if authorised, approve incremental advancement. With this system increments are no longer automatic, and if your performance is 'fair' or 'deficient' your pay will not rise. But, on the plus side, your manager *can* reward good performance with any or all of the following —

•**accelerated advancement** — this will be considered where your work for this year and other years seems to be consistently outstanding;

•**incentive payment** — where your current year's work seems outstanding; and

•**reclassification** — where your achievements and competencies seem to justify a higher level.

Whether or not you get an increment will depend on whether or not you have achieved your work objectives and competencies.In some cases, however, your manager may decide that your performance was satisfactory even though you didn't achieve your objectives, judging that the fault lay in circumstances beyond your control. For example, a bushfire may have burned out your experimental plantings, your computer may have broken down repeatedly, or you may have had an unusual amount of time off with sickness. Or, as often happens, the task you were working on may have opened up like a flower, revealing undreamt-of complexities.

In all of this, if you and your manager don't see eye-to-eye, you move to the next-up manager.

Confidentiality

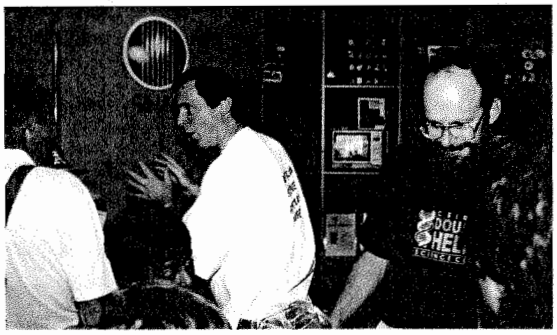
Your manager will keep your form handy, so that you can have access to it whenever you like, but will not let others see it. You, of course, can keep a copy for your own reference.

As each appraisal cycle is completed your form will go onto a confidential file, with access allowed only to those with a legitimate right, as verified by the Divisional Personnel Officer or equivalent. (In practice, that would normally be appropriate Divisional personnel staff and appropriate management staff.)

The next cycle

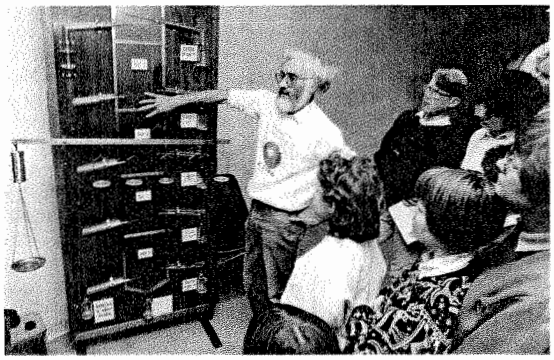
The next cycle begins as soon as the old one is complete, but you might like to take a few days to think about work objectives for the next period, and that's fine. You and your manager would then arrange a good time for another Stage 1 meeting, beginning the process for the next appraisal period.❖

Acknowledgements, apologies, and thanks to Roger Hargreaves for the illustrations, adapted from his Mr Men books.—Ed.



Above, CSIRO's stand at the Royal Easter Show in Sydney. Next stop the Brisbane Show, August 8–17, and then probably Adelaide. Left, Lindsay Bevege, Manager of the Public Affairs Unit, and right, Ross Kingsland, Manager of Education Programs, have their skills tested as they 'manage' crowds of curious show-goers in the small space of the exhibit.

... and the Hobart Open Days



Fisheries scientist Dr Clive Stanley demonstrates the 'Fishery Management Model' (or pin ball machine) to crowds at the Hobart Open Days in April. Photo by Graeme Johnson.

Wendy Parsons, Communications Manager for the Institute of Natural Resources and Environment, went along to the recent Open Days at CSIRO's Marine Laboratories in Hobart, and she offers CoResearch readers this personal account of the event.

The morning of 18 April dawned crisp and clear in Hobart. Down at the CSIRO Marine Labs, ideally located on the waterfront, the research vessel *Franklin* was sporting flags from stem to stern and miles of brightly coloured bunting flapped away above the main building.

Everything was ship-shape and in order. No one would ever have guessed the mammoth effort that led up to that impressive scene, the organised chaos the day before, the research staff rehearsing their lines, tour guides pacing out their routes, last minute adjustments to displays and signs.

But that was all behind them and now the corridors and laboratories were filled with pictures, charts, scientific gear and, most especially, smiling staff.

At 10 am the buses drew up to disgorge hundreds of students ready for the fray. They kept coming in a steady stream, as did the general public, over the next three days. In all, about 10,000 people came through to learn of the wonders of the oceans and the fish that live in them, and to trace some of the intricacies of forests and trees. What they were seeing was the work of CSIRO in Tasmania.

One of my outstanding impressions was of Angus McEwan, Chief of Oceanography, discoursing in impeccable Scientific with one of his research staff — then instantly switching into fluent Kidspeak when descended on by a school group, to tell them about the experiment he had set up specially for them!

Another impression — Jeannie-Marie Levoi holding a group of small schoolgirls spellbound as she showed them how baby oysters grow and what they eat.

Also, the smiles and enthusiasm of the Double Helix kids.

All up, a great experience. Go to an event like this if you want to revive your faith in human nature and especially if you think that joy in the wonder of science is flagging in CSIRO.❖

Project Ambassador at the Sydney Show

CSIRO's roving journalist and PR pundit, Patrick O'Neill, sends this report of his first showground gig.

On the 8th of January (my birthday), when asked if I'd like to organise CSIRO's stand at Sydney's Royal Easter Show, I seem to recall saying 'I'm always in for a new experience,' while thinking 'you mug!'. Both were true. It was a new experience, but when I looked at the date I realised what a mug I was. I had ten weeks!

Despite the trauma, I think I can safely say it worked, and worked well.

I estimate that 120,000 people visited CSIRO's stand. In ball-park figures, it cost a little over $60,000 — or 50 cents per visitor. We spend more than that on brochures!

The stand is reusable and destined for the Brisbane show. It may also go to Melbourne and Adelaide, and, if the crowds are similar to those in Sydney, more than a quarter of a million people will have seen it by the end of the year — a very effective way to sell CSIRO to the public, and an excellent 'Project Ambassador' event.

Of course there was a lot wrong with it, as you'd expect with something organised in such a hurry by someone with so little experience. But there was a lot right with it too:

- we clearly defined who our target audience was, why we wanted to be there, and what we wanted to say;
- we hired a good exhibition consultant and designer;
- we were blessed with enthusiastic volunteers and communications staff.

The principal faults of the stand lay in the captions. They lacked quality and there were mistakes — the result of a shortage of experience, staff and notice. Some subjects had to be left out for lack of good photographs, and the shop could do with some re-planning.

But why be at a general public show at all? This was a question I was often asked, and the answer lies in the following quote from the Bodimer report to Britain's Royal Society (1985), which states —

'If the public is not told about the scientific research it supports through its taxes, it will not be unduly concerned if that level of support is reduced.'

So I wanted an easy-to-understand showcase that would give marginal-seat voters a quick impression of what we do. If they came away appreciating why we exist, how we are relevant and what makes our work exciting, then we would have succeeded.

I wanted CSIRO given a high-tech air — a sort of 'Beyond 2000' image. The stand had to have flashing lights, 3D exhibits, short captions and plenty of things to touch. I wanted exciting T-shirts for the staff, flashy badges and pop-science merchandise in the shop.

The stand had to 'stand out' and be relevant. Visitors struggling through a crowded pavilion would be lucky to have a concentration span of more than three or four minutes. Any research that could not be understood in a few seconds would not have a chance. Above all, it had to be attractive to children, hence the hands-on exhibits. They would be the key to attracting adults.

Once attracted, there was a super-magnet for them to try to pull apart, a computer on which to try out remote sensing, an atomic clock for a time check and a display of biological control in action. Eighty-five Caligrapha pantherina beetles were seen demolishing some Sida acuta, a plant that has become an aggressive weed in the Northern Territory.

Staff from the Sydney Science Education Centre put on periodic 'science shows' demonstrating how liquid nitrogen boils, silly putty flows and PSZ (partially stabilised zirconia) will not break. So popular were the shows that on one occasion I counted seventy people watching!

The stand also had to be flexible. It had to be able to 'showcase' NSW research as well as present the national perspective. If it goes to other capitals, it will also have that capacity.

But it also needed an event. If we could attract media interest during the early part of the show, then hopefully the crowds would follow. Dr Stocker pulling the wool off a 'self-shearing' sheep was the perfect lure. Indeed, the resulting publicity on biological wool harvesting was syndicated round Australia and many visitors came to see — and pillage — the fleece exhibited on the stand as a result!

Finally, some plaudits for the many volunteers who gave up their time. A stand without happy staff eager to talk to the public is just a shell. Apart from the Stocker family — the Stocker girls took $50 in the shop — one director, two assistant chiefs and many scientists put their names on the list. Importantly, many technical and administrative support staff also volunteered for this major 'Project Ambassador' event.

'Oh ... you won't get anyone to give up their Easter to work on a waste of money like that!', moaned the occasional prophet of doom. As it turned out, the response was so great that we were turning volunteers away. If some were worried about their lack of scientific education inhibiting their ability to answer questions, the following interchange should reassure.

Irate visitor and Patrick O'Neill

Q: Have you got a science degree?

A: No.

Q: Then what are you doing here?

A: I'm running the stand!

Q: Then find me a scientist to answer a very important question!

A: We have hundreds of them. What do you want to know?

Q: I want to know if there is life like ours on any other planet in the universe.

I don't know about the universe, but there was certainly life on our stand. It had a soul. Indeed, that is what set it apart from other big-budget extravaganzas. Moreover, the vast majority of volunteers enjoyed the 'Project Ambassador' experience. While I may have been a 'mug' to accept my birthday present at such short notice, I won't be such a mug next time!❖

***CoResearch* is produced by the Public Affairs Unit for CSIRO staff and interested outsiders. Readers are encouraged to contribute or offer suggestions for articles. Stories may be reproduced, provided acknowledgement is given to both *CoResearch* and CSIRO. The deadline for contributions is the 15th of each month, but earlier is better, as issues fill up fast. Editor: Liz MacKay, PO Box 225, Dickson ACT 2602. Phone: 06 276 6567. Fax: 06 276 6641.**

CoResearch

No. 341 June 1991 CSIRO's staff newspaper

CSIRO AUSTRALIA

New Minister for CSIRO

(— oh, and for science and technology in general)

Makes you wonder, doesn't it, whether maybe we should start directing our resources into projects aimed at discovering a new and more effective underarm deodorant for national science bodies. Our Ministers keep going away from us.

Anyway, the latest inheritor of the portfolio of Science and Technology, Mr Ross Free, looks promising. If there are doubts that he has quite the political clout of a Simon Crean, there is no doubt he has the right sort of background for a Minister of Science. He's an honours graduate in science, and has not only taught science but been co-author of quite a few science texts for use in schools.

And, in fact, we don't yet know how much clout he may or may not have when it comes to pushing for our budgetary needs.

So far, he seems to be no slouch. He's already made several visits to CSIRO, and on Sunday June 16, after little more than a week in office to gen up on what we were up to, he's sent out a press release announcing that Australia is to have a national science festival in 1993. And challenged the science community and industry to come up with ideas for it.

'For Australia to become the clever country it is important to increase awareness of the crucial role of science in economic development,' he said.

'It is important for Australians to realise how integral science is to their everyday lives.

'Australian businesses should be more prepared to take up the challenges of Australian scientific and technological innovation.

'The science community, for its part, must show that it is proud of its profession, and that it is in touch with the needs of Australian society.'

But Mr Free gave credit to the science community for having the idea for a festival in the first place. He paid tribute to two researchers from the ANU's John Curtin School of Medical Research, Dr Arno Mullbacher and Dr Paul Waring, who had developed the idea about 18 months ago, and had worked hard to see it become a reality.

The event, said Mr Free, would be a forum for scientists, technologists, academics, industry leaders and government decision-makers from Australia and overseas.

But it would also be a showcase of Australian science achievement for the Australian community at large. It would include plenty of hands-on activities for families, presenting science as fun, and as part of everyday life.

The festival is to be held in Canberra to give the event a national profile, and because so many of Australia's scientific institutions have their headquarters there. It will incorporate CSIRO's successful 'Biota' festival, held in Canberra in October last year, in which scientists opened their laboratories to the public.

Mr Free seems to have a genuine commitment to science, as well he might, with his background.

He told *CoResearch* he was greatly impressed with the quality and breadth of the contribution made by CSIRO and believed his role was to promote its objectives in research, collaboration with industry and other science bodies, and in leading an increased science and technology effort in Australia.

'Science and technology,' he said, 'are providing solutions in this critical time in Australia's history.

'In the same way that many of us grew up in Australia with a view that CSIRO was the innovative engine of the nation, so too do most Australians today look to the organisation to increasingly provide answers to present and future problems with the intellectual power that has epitomised its research efforts through the years.

'CSIRO has been setting a significant pace in its increasingly important work,' Mr Free said, 'And I am immensely pleased to be part of the endeavour.'

Ross Free was born in Bathurst on March 7 1943, and attended Bathurst Demonstration School and All Saints College there. He took his science degree at the University of New South Wales and his Diploma of Education at Sydney University.

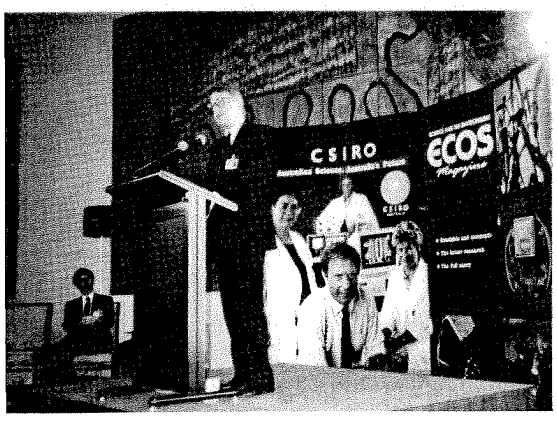
Before going to teach at Sydney Boys' High School, he worked at the University of NSW, doing research into mental health.

He first went into Parliament in 1980 as member for the federal seat of Macquarie, and has since changed to the seat of Lindsay.

Mr Free has served on several House of Representatives Standing Committees — on Publications; Expenditure; and Employment, Education and Training. He is also a member of three Government Caucus Committees — Economic and Industrial Relations; Employment, Education and Training; and Foreign Affairs, Defence and Trade.

❖❖❖

World Environment Day: Wran launches 'new' Ecos



CSIRO's magazine on science and the environment — *Ecos* — has just had a facelift. Perhaps 17 seems young for such an operation, but you should have seen the heads turn on Wednesday June 5, World Environment Day, when CSIRO Chairman Neville Wran launched it at Parliament House in Canberra.

Mr Wran said *Ecos* was the source Australians should turn to for reliable information about environmental issues. It had often reported on unrecognised issues that were now part of the mainstream environment debate.

For example, he said, the first edition of *Ecos* 17 years ago had talked about 'such obscure and unfashionable topics' as the greenhouse effect, toxic pollution in Tasmania's Derwent River and uranium mining in northern Australia.

'If you want to know where the environment debate is heading, and why, *Ecos* is a great place to look,' Mr Wran said.

Mr Wran said that many people had been surprised that the top priority area identified in CSIRO's recent priority-setting exercise had been environmental aspects of economic management, 'or in other words, the marriage of industry and the environment.'

Asked about the toxic waste incinerator debate, Mr Wran said that *Plascon*, a new process being developed by CSIRO for the high-temperature destruction of toxic wastes, would be 'a huge step forward, and probably a huge step forward for the whole world.'❖

A Tale of Three Ministers

To have served under three Science Ministers in fifteen months as Chief Executive of CSIRO smacks of the stuff that records are made of! Mr Free has now received the Science and Technology portfolio like a sharp pass to the (right?) wing, and for CSIRO his pace and ball handling will be of decisive importance.

I'm delighted to be able to tell you that our new Minister is intensely interested in and supportive of CSIRO. In fact he arranged three meetings with me in his first two days of office. He has also met Mr Wran and the entire Executive Committee for lunch. Not bad in his first week!

Mr Free is a scientist, and he shows a gratifying commitment to the clever country similar to that of his predecessors, Simon Crean and Barry Jones.

Jones made a great contribution in raising the level of debate on science to the status of an important national issue, and he played a decisive role in framing the crucial White Paper of May 1989.

The Prime Minister's Science Council, a real opportunity for scientists and industry representatives to have an interface with the head of government, was also a major achievement of this Paper.

Simon Crean was also a very effective Minister for CSIRO. His higher calling has come at a critical time for the Organisation. We have hugely important issues like our capital budget hanging in the balance at the time of writing.

Having visited now nearly every CSIRO site, of which there are about 108, one of the things that really struck me is that our capital assets are in a parlous state. As I wrote recently in my article for the April/May issue of *Search*, urgent attention needs to be given to CSIRO's approximately $1,000 million worth of assets.

No responsible manager could preside over a further decade in which our assets are allowed to erode. For that reason I've decided, with the full support of the Board, that we absolutely need to spend a minimum of $35 million per annum for the next three financial years, on replacement, refurbishment, repairs and maintenance to our buildings and assets, and that's without any major new building programs.

We estimate that we can fund $15 million of that from internal sources, both by scratching up some of our own appropriations, and by selling some of our assets, but we will need $20 million of additional money to be able to conduct the program.

Now, if we don't succeed in gaining that capital budget, obviously it means that we'll have to cut research programs. That's the last thing we want to do, and we think it's the last thing the government wants us to do.

For that reason we've made a very vigorous and pictorial case to the government, indicating the state of many of our buildings. Simon Crean has been very supportive in helping us prepare that case, which is now before the Expenditure Review Committee of Cabinet.

Mr Wran and I have discussed these critical issues with Mr Free, together with other government impositions with which we disagree, such as the efficiency dividend (Oh, you can be sure I'll lose no opportunity to mention that!) and the fact that the government hasn't yet officially notified us that supplementation of our salary increases is approved.

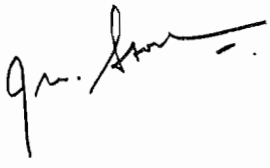
These three issues still remain before us as major concerns, so the new Minister has a fairly greasy ball to play across that level playing field so beloved of many of his colleagues.

Finally, at a time when the nation is in a rural crisis, it seems very important to me (and this is my column!) that a strong minister who has a real commitment to micro-economic reform and to the welfare of the nation be given the Primary Industries and Energy portfolio, and I think that Simon Crean is likely to handle it admirably.

At a time when commodity prices are low, and rural industry research funds have their income threatened, the maintenance of an R & D capacity is going to be essential for the future of rural industries. Mr Crean, with his appreciation of these issues, will continue to be extremely important to CSIRO. I wish him well.

Speaking of wishing people well reminds me of CSIRO's Benevolent Funds. (... just a subtle way of reminding you I have a nodding acquaintance with Latin.)

CSIRO does have benevolent funds, four of them, covering four regions, and this issue of *CoResearch* carries a brief account of them. They are doing an excellent job for staff and their dependants in times of crisis, and I recommend that you turn the shadow of your 'well-wishing' to fellow workers into the substance of a formalised donation to the 'benevolence' they provide, by joining. I have.



Letters to the Editor

Dear Editor,
I notice that the Centre, Corporate, has revised the titles, position, for a number of managers, senior (Circular, Policy, 91/5). I am not sure how the titles streamline the Organisation's Delegations, Financial (a rose by any other name etc ...) but, in the interests of streamlining the language, could we please have 'Corporate Property Manager', 'Capital Resources Manager', 'Information Services Manager' rather than 'Corporate Manager, Property', etc.?

Dawson, Iain
Division of Industry, Plant

Dear Editor,
Thanks for the article on PPE from the Human Resources Branch in the May issue. I had to stop reading a couple of times to make sure I was in fact a mature adult working for the nation's premier scientific organisation.

The part which really made me do a double take was the bit — 'Competencies are still something of a mystery to most staff of CSIRO ... '. Speak for yourself! Out here in research land we don't know the meaning of the word incompetencies!

J.E. Vercoe
Tropical Animal Production
Rockhampton

Dear Editor,
Your 65th Anniversary commemorative tribute (*CoResearch*, April 1991) included a photograph of the CSIR Division of Forest Products *circa* 1930. One name in the caption reads 'John Cummings?'

I write to confirm that this was indeed J.E. Cummins, universally known as Jack Cummins, whose obituary was published in *CoResearch* No. 328, October 1989. In 1930, he was doing research on preservation, becoming Officer-in-Charge, Preservation Section, in 1936. In 1945, he was appointed Director, CSIR Scientific Liaison and Information Bureau.

In the same photograph, 'Ian Lanlands, timber mechanic' appears. He was to become Officer-in-Charge, Timber Mechanics Section, and subsequently Chief, CSIRO Division of Building Research.

I would like to take this opportunity to acknowledge the pioneering contributions of Jack Cummins in technology transfer. There is no doubt, in my view, that Jack Cummins was ahead of his time in his conviction that interpreted scientific and technical information is a vital element in a national R & D infrastructure.

Recently in Australia, after a long period of limited activity, there is renewed awareness of the importance of the scientific information resource and a national strategy is being developed.

Clyde Garrow
Information Services Branch

Dear Editor,
The cartoon of Brailsford Robertson in *CoResearch* No. 339 would be by John Henry Chinner, who was quite noted as a local caricaturist in Adelaide, in days gone by! He was Secretary and otherwise closely associated with Prince Alfred College in Adelaide for many years — from about 1911 until his death in 1933.

With kind regards
David Riceman
Millswood SA

Super CSIRO Medal created

The Board of CSIRO has created a glamorous new award — the Chairman's Medal — for the highest of its scientific high flyers.

The Chairman's Medal will be a sort of jewel in the crown of the CSIRO Medals, with the winner being announced as the climax to the award ceremony each year. This will happen for the first time at the CSIRO Medals award ceremony in November 1991.

The Medal carries with it a prize of $25,000 cash or equivalent.

The winner will be selected on the basis of a major achievement in the advancement of scientific knowledge or technology or its commercial application.

The achievement must have occurred or gained recognition in the past five years.

Nominations should contain

- details of the nominee, including a brief career outline, and publications relevant to the achievement;
- a concise description of the research achievement and evidence of its scientific or industrial recognition;
- names of at least two referees, at least one being a user of research results, where appropriate.

Chiefs and Officers-in-Charge should send nominations to their Institute Directors for assessment by August 16, so if you want to nominate yourself you should get the material in to your Chief or OIC well before that date.

Directors will send a short list of nominations for the Chairman's Medal to a judging panel chaired by the Chief Executive.

Nominees for a CSIRO Medal will automatically be considered for the Chairman's Medal, but you can't win both in the same year. An information circular — No. 91/25 — has been sent out inviting nominations for the 1991 CSIRO Medals and giving details of who should apply and how.

If you have any questions call Jeff Fitzgibbon, Secretary of the Medals Selection Committee, on 06 276 6589.❖

COSSA launches series of space seminars

The CSIRO Office of Space Science and Applications (COSSA) will be running a series of fortnightly seminars on the theme 'Australian Space Activities to the Year 2000: Strategies and Priorities for Research and Development.'

The seminars will be held from June through December 1991 at CSIRO headquarters in Canberra, and will include speakers from CSIRO, other government science bodies, the universities and industry.

Speakers will be asked to provide the texts of the seminars as chapters of a book to be published in early 1992.

What's a REDCOM?

The letters stand for Regional Employee Development Committee, and there are five of them, serving the ACT, New South Wales, Queensland, South Australia and Victoria/Tasmania.

The REDCOMs try to identify and arrange the professional, technical and trades skills training that can be more appropriately and cheaply done on a regional basis. Their activities are meant to complement the individual training and development courses arranged by Divisions.

All the Divisions and the larger sites are represented on the committees, and members are drawn from professional, technical, trades and administrative areas.

REDCOMs have been given some funds, but not all courses will be fully funded by them. Sometimes your Division will have to chip in. Also, though they are often able to help with the shorter skills courses, they don't arrange tertiary or other lengthy courses.

The sorts of courses they do handle vary according to area, but cover skills like word processing, defensive driving, first aid, public speaking, light microscopy, using a chainsaw and chairing presentations.

If you think you might be interested contact your Personnel Officer; copies of the REDCOM booklet, including contacts, detailed information on available courses, and course nomination forms, have been sent out to all Divisions.

CSIRO does great work. But how well does it manage to communicate that great work to the outside world? And what about the inside world? How well are we communicating with each other? In August the communicators of CSIRO will be having their second-ever national conference. It will be a very big deal, with their conclusions, in the form of a set of recommendations, to be formally presented to Dr John Stocker, Chief Executive of CSIRO, at the conclusion of the three-day event. The program shown below is still subject to change, so before you do anything hasty, like attending, you should check with one of the organisers listed.

SCICOMM 91

13th, 14th, 15th August 1991
Ambassador Hotel, Geelong Victoria

Conference Program

Day 1 Managers — Nancy Mills Reid, Jenni Metcalf

Preliminary Workshops

Session 10am–11.15am — invited participants only
Session 11.45am–1pm — registered participants

1. Communication Programs Resources
Co-ordinators: Jenni Metcalfe, Division of Tropical Crops and Pastures
Phone 07 377 0361, and
Wendy Parsons, Institute of Natural Resources and Environment
Phone 06 276 6615

2. Evaluation/Recording Communication Programs
Co-ordinator: Judy Marcure, Division of Information Technology
Phone 02 887 9331.

3. Internal Communication
Co-ordinator: Beryl Morris, Manager, National Information Network
Phone 08 268 0116.

4.Visual Aids for CSIRO
Co-ordinator: Jeff Prentice, Division of Mathematics & Statistics
Phone 03 542 2646.

Session 1pm–2.30pm — lunch and registrations
Session 3pm–5pm — practical workshops, part 1
1. How to write and implement a communication plan
2. Communication in research planning
3. Winning sponsorship
4. Communicating with politicians

Day 2 Managers — Wendy Parsons, Peter Murphy

Session 8am–9am — conference registrations
Session 9am–9.30am — conference opening,
Session 9.30am–10.30am — case study 1
Session 11am–12noon — case study 2
Session 12noon–1pm — lunch & pearls,
Session 1pm–3pm — presentations from preliminary workshops 1 & 2

Parallel session — photographers' workshop
Session 3.30pm–5.30pm — practical workshops part 2
1. Displays and exhibitions
2. Success in the media
3. Marketing
4. Publishing

Day 3 Managers — Rae Robinson, Pat Naughtin

Session 9am–10.30am — panel discussion:
'Roles and Relationships of Divisions, Institutes and Corporate Centre'
Session 11am–12noon — Research Data Base
Parallel Session — graphic designers workshop
Session 12noon–1pm — lunch & pearls
Session 1pm–3pm — presentations from preliminary workshops 3 & 4
Session 3.30pm–4.30pm — Plenary Session, and presentation of final recommendations to Dr Stocker

Pearls (Personally Arranged Learning Sessions)

Topics (so far)
1. Further education for science communicators
2. Data bases to assist science communicators (Australis etc)

Priority rules, OK!

But that doesn't mean priority is superiority

Dr Hugh Tyndale-Biscoe, Assistant Chief of the Division of Wildlife and Ecology, is one of many whose programs were approved for funding support by the CSIRO Board on June 18. (See story opposite, page 5.)

The program, 'Biological Control of Vertebrate Pests', falls wholly under the heading of 'Environment', one of the 'research purpose' priorities that came close to the top of the screen in the assessment of national priorities released by the Executive Committee earlier this year, and has been given the $180,000 the Institute of Natural Resources and Environment had asked for.

The aim of the program is to control the numbers of vertebrate pest species by reducing their fertility.

'This idea,' said Dr Tyndale-Biscoe, 'is what we call a generic idea. That is, if we can show that this method will work for rabbits and foxes, then we can later develop the same method for other mammal pests, such as mice or rats in Indonesia, possums in New Zealand, or any other mammal, because the principle will be the same.'

The idea had emerged about three years ago, he said, in discussions in the laboratory, and was a completely new concept for controlling mammals.

Dr Tyndale-Biscoe said that in the past people had always tried to control wild mammals, such as rabbits, foxes, mice and rats, by killing them. The problem with that, he said, was that reducing the numbers only allowed the next generation to survive in greater numbers. Rabbits, he pointed out, produce far more young than would normally survive to become adults.

'If you kill the adults all you do is make space available for more of the young ones to survive.

'Over the years, selection favours those that either avoid the poison or can resist the disease. So you gradually get a population that is no longer affected by the agent that you're using to control it. In the case of rabbits, that was the myxoma virus.'

In a sense, Dr Tyndale-Biscoe said, such an approach actually helped the species to become stronger.

'Over the years,' he said, 'people have discussed the point that if you could only find a way of controlling the fertility of a mammal like the rabbit, this would be a much more effective way of controlling the population. The trouble was that nobody could think of a way to get a contraceptive into the wild population in sufficient numbers and sufficiently cheaply.

'Now, the essence of our new idea is that you could use a virus as the means to transmit the contraceptive into the wild population.

'You find the gene for a particular protein that is essential for fertilisation; you put that gene into the virus (the myxoma virus, in the case of the rabbit); that provokes the infected rabbit to make antibodies to its own fertility protein; and that acts as a contraceptive.'

Dr Tyndale-Biscoe said he had had great difficulty trying to get money for research on the idea. None of the funding bodies would back it, for two reasons. First, they thought it was too outlandish to work (one called it 'too innovative'), and second, it was too expensive, requiring new scientists with new skills

'It became very frustrating,' said Dr Tyndale-Biscoe, 'because it was quite clear that we were onto a very important idea.'

'We got a lot of encouragement around the world from other scientists, but we couldn't persuade any Australian funding bodies to support it, and in the current climate of CSIRO we couldn't get any additional resources from within the Organisation to support a new direction like this.'

But then last year some funds were made available through the Prime Minister's May Statement. Dr Tyndale-Biscoe was able to recruit one extra scientist.

'That started the process off,' he said, 'and at that point I said to my program team: "Well, we all agree that this is a very important project, but we're not going to get it done unless we're prepared to change our own program and move more resources into this."'

They made the decision to wind down the research they were then doing on marsupial biology: several scientists were moved out of that work and into the ancillary areas of the new work on rabbits.

In October last year more money came in, from the Prime Minister's Environment Statement on endangered species, for work on foxes. The team was now able to recruit two more scientists to work on the same concept, though on the fox rather than the rabbit.

'The momentum was building up,' said Dr Tyndale-Biscoe. 'The Chief moved ecologists out of other projects to work on this project on the fox and the rabbit.'

However, the marsupial work that the people working on the program had decided to wind down was very important scientific work, work of international repute. It was work for which Dr Tyndale-Biscoe had won a CSIRO medal only a few years back.

So that was a real sacrifice. At first Dr Tyndale-Biscoe had tried to argue with his Chief, Dr Brian Walker, that they should not reduce the marsupial biology work. It was good science. It was science that could be done only in Australia. They ought to be testing the new concept with additional funds.

But, as the years went by and the new idea languished, it became clear that they weren't going to be able to do both.

Both were good science, but the marsupial biology research, the research Dr Tyndale-Biscoe had joined CSIRO to do, was attractive mainly to scientists. The eradication of vertebrate pests was attractive both to scientists and to funding bodies.

Dr Tyndale-Biscoe chose the eradication of vertebrate pests. Better one research project alive and kicking than two starved into impotence by inadequate funds.

He *is* happy with the program, which he said is extremely exciting.

'It's got a lot of intellectual challenge,' he says. 'It's really breaking new ground scientifically, and it's got a potential to be very important for Australia.'

But the cost, he said, was high.

'We were doing some extremely exciting research on marsupial biology; it was reaching a very advanced stage, and we've had to stop it. I'm very disappointed about that.

'Let me give you an example.

'Next month, here in Australia, two of us will be attending an international conference on the pineal gland. It will probably be the last time we'll be involved in international research conferences on this topic, with which we've been involved for nearly ten years.

'One of the things with pineal research that interests everyone is how an animal measures time. We know they do respond to changes in day length and so on.

'The animal we were working with, the wallaby, is extremely sensitive to these changes, and we think that we were almost within reach of finding out where the centre is in the brain where animals can measure time.

'This is fundamental research with wide implications, and if we hadn't had to stop we'd have been spending time on that.

'But we have had to stop. And once you stop you really can't do anything because you can't keep up with the literature or the experiments.

'You just have to see it go by.

'Some people in CSIRO talk about this 'prioritisation' as though somehow what we end up with is better than what we had before.

'That's not true. The things we had before were excellent, but, with limited resources, you have to make some difficult choices.'

Dr Tyndale-Biscoe also admitted that there is a legitimate worry that changes may actually be for the worse.

He said the push for CSIRO to find 30 per cent of its research resources had a very considerable long-term price-tag, because when a project gets 30 per cent of its funds from outside it is virtually forced to put the rest of its resources behind that 30 per cent.

'That was our problem with this project on fertility control,' he said, 'We got a certain amount of funding from outside bodies, and then in order to be sure that the thing's going to work, we've had to transfer a lot of people from other projects into it.

'This too is done at a cost, and the cost is the basic science, because it's very much more difficult to say where that basic science is going to end, whether it's going to produce benefits or not.

'What worries me as I near the end of my career in CSIRO is this — ten years down the track, where are CSIRO's scientists going to generate their new ideas, like this one that we've generated?

'Our idea was generated out of discussion by people who were fully engaged in scientific research into reproduction, and because of their wide knowledge of reproduction they could come up with some lateral thinking.

'We can now take advantage of that idea because we're tapping into an intellectual capital we've been nurturing, but what worries me is that in ten years time, when all of us are busy doing these prioritised research programs, who's going to come up with the lateral thinking?

Dr Tyndale-Biscoe quoted the reply made by Albert Szentgiorgi, noted Hungarian physiologist, when asked what research he was going to do next year.

'If I knew what I was going to do next year,' he said, 'it wouldn't be worth doing.'

'But we don't do that now,' Dr Tyndale-Biscoe said, 'Now we have to say what we're going to do in five years time.

'The essential driving force of scientific research is a burning curiosity, and then the resources to be able to take that to the limit.'

Dr Tyndale-Biscoe agrees that we must to do research of benefit to the country, but he feels we must also be very careful not to lose sight of the basic science.

'Mind you, when your research is directed at a very specific goal, as ours now is, it does sharpen up everybody's critical faculties.

'You've got a lot of very sharply focused questions, and that's fine — it's very exciting; but the other kind of research is also terribly important.

'We are setting priorities,' he said, 'between intellectually equal projects. And the reason for the change is money.'

'If the implication is given that it's all so much better now because we're all charging along on high-priority research whereas before we weren't, then I think that's a misconception of CSIRO.'

However, Dr Tyndale-Biscoe certainly doesn't think the work being done under his present project is intellectually *worse* than what it replaces.

He may know what he's doing next year, but it's still well worth doing.

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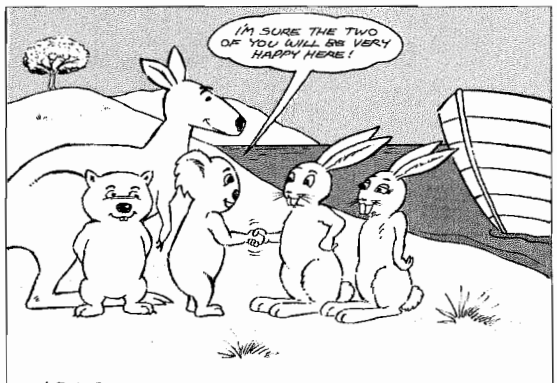

1859: THE INTRODUCTION OF RABBITS TO AUSTRALIA

Ganging up on a new world market

A team of twenty CSIRO staff — drawn from across six Divisions and three Institutes — is working on a project aimed at creating a generic biosensor technology in Australia.

According to recent international market surveys the world is on the brink of an unprecedented surge in biosensor sales. The CSIRO team is in a front-line position for gaining international scientific and commercial interest in its biosensor developments because of the wide range of research disciplines it can bring to the task.

The leader of the project, Dr Tony Collings, of the Division of Applied Physics, says the new sensor the team is developing has major potential in both food packaging and the supply of clean water.

In spite of a name — SAW/ELISA — that brings to mind old-fashioned circus acts, the device is absolutely state-of-the-art. It is essentially a blend of two advanced technologies — surface acoustic wave devices (SAWs) and enzyme-linked immuno-sorbent assays (ELISAs).

Initially, thin metal electrodes are sputtered on to a piezo-electric substrate.

When surface sound waves are sent across this substrate from one set of electrodes to another, tiny changes in mass along the pathway show up as small changes in frequency. Concentrations of contaminants as low as a few parts per billion can be detected.

In the SAW/ELISA biosensor a thin layer of molecules, containing highly selective chemical attractors produced by the immunological system of an animal, is attached to the substrate.

This layer is first made even more selective by means of an enzyme-linking process. Then a surface acoustic wave device is attached to it, further expanding the efficiency of the two sensing processes.

Dr Collings said that substances called trichloro-anisoles, which are used in food packaging, can cause a mouldy taste and smell. Contamination is a serious potential threat to the dried fruits, rice, wine and beef industries.

'Excessive chlorination of water supplies should also be avoided,' he said, 'and this may be possible if we can detect contaminants quickly and more precisely.'

The CSIRO team is drawing on a wealth of scientific and technical capital including —

- comprehensive thin films facilities, and advanced skills in ultrasonics design and modeling and in the physics of transducers (Division of Applied Physics);
- expertise in monomolecular layer-surface physico-chemistry (Division of Chemicals and Polymers);
- enzyme-linked immuno-sorbent assays research (Division of Animal Health, Division of Food Processing, and the Wheat Research Unit in the Division of Plant Industry);
- monoclonal antibody production facilities and experience in scale-up from lab research to production (Division of Biomolecular Engineering).

The team is poised to cash in on its research results in niche markets where commercialisation is immediately practicable.

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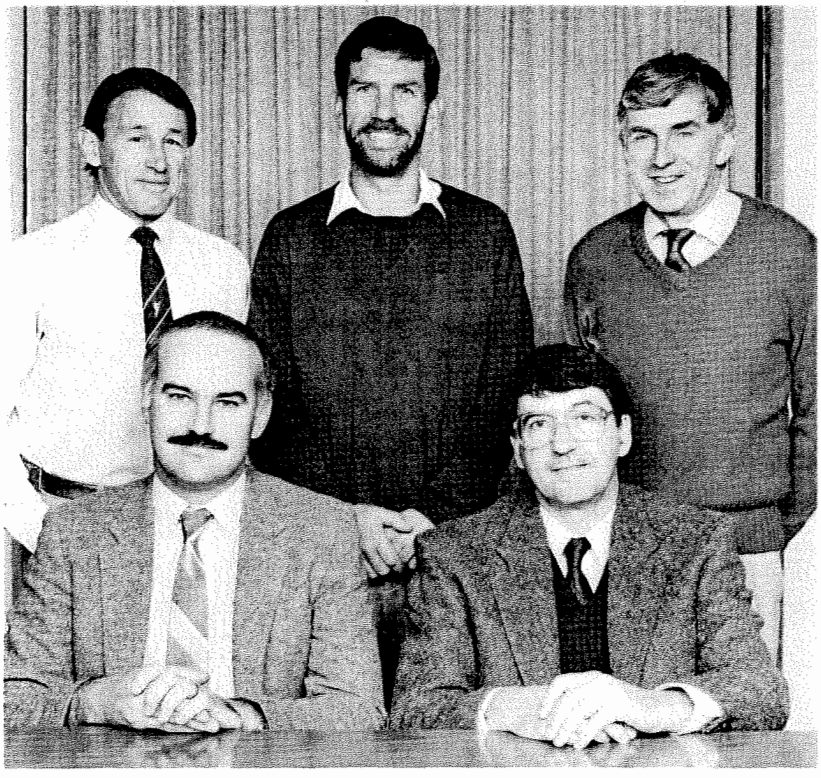

Above, the Sydney connection in the SAW/ELISA project, part of the CSIRO team whose better biosensor may soon have the budding world market for these devices beating a path to our door. Left to right, back row, Dr Tony Collings, Division of Applied Physics, Dr Don Price, Division of Applied Physics, Mr Don Barnett, Division of Food Production; left to right, front row, Dr John Skerritt, Wheat Research Unit, and Dr David Laing, Division of Food Processing. The photo was taken by Maria Basaglia of the Division of Applied Physics.

Board approves first round of projects for priority funding

In February this year CSIRO's Executive Committee released the broad outlines of the Organisation's new priorities. Now those outlines are beginning to be filled in, with specific projects and specific movements of resources.

A central pool of money was created at the time by a 1.5 per cent levy on all CSIRO areas, amounting to just under $5 million, for distribution in the financial year 1991–92.

Since each project being funded has to provide a matching sum, the actual amount being redirected is around $10 million.

The first decisions have now been made on the redistribution of that money. On June 18 the CSIRO Board met to consider the advice of the Chief Executive on individual project proposals put forward by Directors and Chiefs.

The Board endorsed the choices, which closely reflected the priorities announced earlier.

For example, projects for waste management, requiring research work in all six Institutes, attracted funding of $606,000, of which $515,000 was for elements falling under the 'research purpose' of 'Environmental Aspects of Economic Development', named as a very high priority in February. (See *CoResearch* No. 338.)

Research on Australia's fragile coastal zones also scored well for both the research purpose of 'Environmental Aspects of Economic Development' and that of 'Environment' — another high flyer in the National Priorities table. Coastal zone research is to have $600,000 from the levy.

In fact, well over half the money from the fund will be going to projects in the two areas of highest national priority: 'Strategic Research for the Minerals Industry' and 'Environmental Aspects of Economic Development'.

But the national priorities are not precisely predictive of CSIRO's project choices. There are two elements in the process: the establishment of national priorities and CSIRO's response to them. The two are far from identical.

For example, project elements with a research purpose classified as 'Environment' attracted only $368,000, though their position on the national priority grid would have put them only marginally behind 'Minerals Industry' and 'Environmental Aspects of Economic Development', which attracted $1,448,000 and $1,265,000 respectively.

The actual amount being redistributed throughout the Organisation also exceeds what shows in these figures. It is not simply a matter of $5 million from the levy being matched by projects' own funds to a total of $10 million; apart from these recently nominated projects there is a process of priority assessment and redirection of resources currently going on at all levels in CSIRO.

So the projects that have been given some funding in this round are not only just the beginning of a long story: they are just part of the beginning. In fact, in most cases they are just part of the beginning of the middle of an even longer story.

Dr Hugh Tyndale-Biscoe, for one, has spent the last year totally redirecting his research effort, on his own initiative. The $180,000 his project has now been granted from the central fund is only a small part of the funds he has got, and spent, over that period, to build a project that can survive the harsh light of priority assessment, not just by his organisation, but by the 'unscientific' business interests that can keep a project alive or kill it. A case of assess yourself before you get assessed. His story appears opposite (page 4).

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Building Science Forum of Australia 1991 Book Award

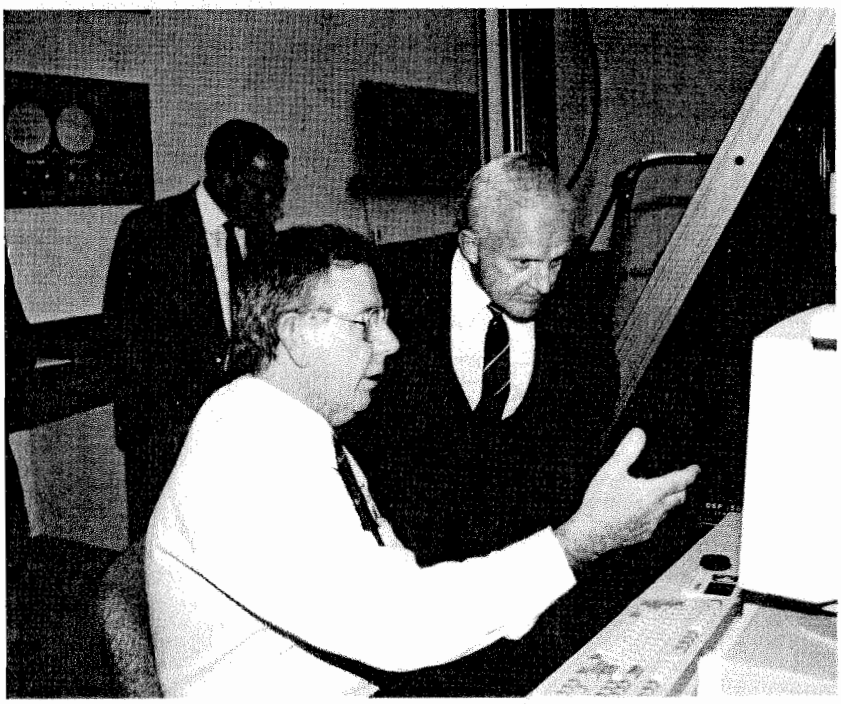
Entries are now invited for the 1991 Book Award of the Building Science Forum of Australia. The deadline is August 19, 1991.

The Building Science Forum is a non-profit organisation set up to achieve a better understanding between the interests that make up the Australian building industry.

Authors of innovative scientific, technical, economic or social publications relating to either building, construction or architecture will be considered as suitable entrants.

For information contact Bryan Cossart, Building Science Forum of Australia, ACT Division, GPO Box 429, Canberra ACT 2601.❖

Division of Applied Physics helps make money for Australia



Above, Mr Bruce Valentine, of the Royal Australian Mint, shows Senator John Button, Minister for Industry, Technology and Commerce, how the optical surface profiler will help in the making of coins. In the background is Dr Bill Blevin, Chief of the Division of Applied Physics, the Division that has developed the profiler.

Last month CSIRO officially handed over to the Royal Australian Mint an instrument that should revolutionise the quality of coin manufacture in Australia. CSIRO's Chief Executive, Dr John Stocker, and Senator John Button, Minister for Industry, Technology and Commerce, officiated at the ceremony.

The optical surface profiler, developed by the Division of Applied Physics, is also being marketed internationally.

The profiler produces high-resolution relief maps of the surface of dies and other tooling used to manufacture coins. Sophisticated non-contact optical techniques are used to enhance process quality control.

For example, the optical surface profiler can check how accurately a coin design is transferred from the die to the coin.

The advanced software for the profiler calculates parameters important for quality control, such as the highest and lowest points on the coin, and displays three-dimensional relief maps in a variety of colours and forms.

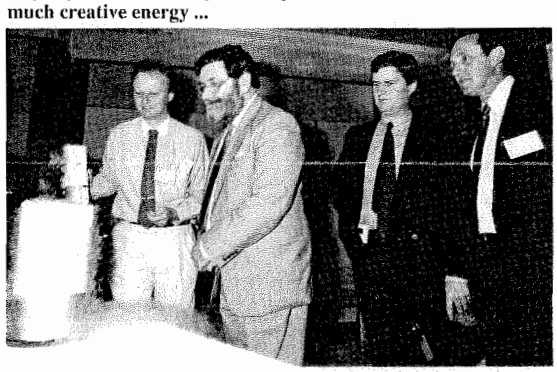
The technology also has applications to other sectors of the manufacturing industy, as prcision shape measurement is essential in the die-making, moulding, pattern-making and other industries.

Caption competition

The response to last month's caption competition was the fastest ever. Whether it was also the best ever is for you to judge. The winning entry for the above photograph (of David Salt, Education Programs) was 'All I did was sneeze and my brain blew out' from Stewart Walker of the Division of Coal and Energy Technology.

Runners-up were 'Catch a falling star and ... ', and 'Aaaaaarg! in E sharp', both from Lynn Pulford of Education Programs, and no fewer than six entries from the Information Services Branch reference library in East Melbourne (what are they doing down there, anyway?). The six were — 'Dis de way we make de pizza (CSIRO Div. Pizza Research?)' (Susan Reed; 'Life is all one big ball of fun' (Nicole Thompson); 'I wonder if my research grant will run to anchovies?' (Penny Braybrook); 'This is the biggest mothball I've ever seen' (Charanjit Walia); 'At last! The world's first non-melting snowball' (Peter Alston); and 'Then I opened my eyes, and she had turned into a ...!' (Jill Crowther).

Makes you wonder about young David. All those submissions! And almost all from women ... And only *almost* all from women! Anyway, let's see if any of the gentlemen below can arouse as much creative energy ...



Generic technology grants

First call for the 1991–1992 round

(communications technology and information technology)

The Industry Research and Development (IR & D) Board invites applications for grants for research in the above generic technologies as part of its Generic Technology Grants Scheme.

The scheme is designed to promote new or enabling technologies of fundamental significance for industry competitiveness in the 1990s, and R & D collaboration between research organisations and Australian industry.

Selection will be based on —
- the extent to which the research project holds the potential of significant improvements in areas of industrial innovation;
- the degree of collaboration between research and commercial organisations;
- commitment of the commercial partner(s) to the project including the capability to exploit the research results commercially;
- commercial potential; and
- scientific and/or technological merit.

Further information and application forms can be obtained by telephoning (08) 276 1273.

Applications close on 19 July 1991.

Wool Expo 1991

With the wool industry in deep crisis, how are graziers reacting to displays of the latest in wool technology and sheep research? Are they so depressed that nothing interests them, so desperate that anything does, or are they simply interested in different sorts of things now? Judith Wood, from the CSIRO Division of Animal Production, took part in the recent 1991 Wool Expo in Armidale, and offers CoResearch readers this player's eye view of the audience.

With the wool industry in tough times, you might have expected that the 1991 Armidale Wool Expo would have been something of a fizzer. Not so. After all, the event is a celebration of wool fleece, fibre and fashion, and what better time to promote the product than when it's facing attacks on all fronts?

Once again, CSIRO staff from three of the Divisions that make up the Institute of Animal Production and Processing gathered in Armidale, NSW, to display CSIRO science to 40,000 people over three days.

This year our feature display was all about the CSIRO Fine Wool Project, a collaborative venture of the Division of Wool Technology in Sydney and the Division of Animal Production in Armidale. The project aims to determine the genetic and environmental factors that influence the production of fine and superfine wool, and to find objective ways of measuring the qualities that go to make the best cloth, particularly that elusive quality of wool 'style'.

Denise Stevens and Kerry Hansford were encouraged by the enthusiastic response from local wool growers. From contacts made at Wool Expo, they now have several people committed to taking part in subjective assessment tests of 'handle' and 'style'.

Barry Hirst and Pat Naughtin from Wool Technology in Geelong are no strangers to the 'open day' and trade show scene, and they found the 1991 Wool Expo the best such event they had ever taken part in. Pat said there was strong interest from producers, who were all keen to talk about potential new uses for our stockpiled wool.

The new wool-rich quilt on display attracted much interest, as did Sirospun, and the display of the recently released Siroclear process. Barry Hirst believes that, in contrast to the more casual attitude in good times, producers are now vitally concerned with progress in both product development and fundamental research.

But the display that undoubtedly attracted most interest was Ralph Chapman's chemical (or non-surgical) mulesing.

Mulesing is a process named after the twentieth-century Australian grazier who invented it — J.H.W. Mules. It consists of removing excess loose skin from either side of the crutch of a sheep to reduce that curse of sheep farmers, blowfly strike.

Dr Chapman, who is a Principal Research Scientist from the Division of Animal Production in Sydney, found himself constantly inundated by producers, agribusiness people and mulesing contractors, all wanting to know when the product would be released.

They were disappointed to hear that release is two or three years away, but pleased to find that CSIRO is working on an alternative to this controversial and unpopular practice.

John Dufty, from Animal Health in Parkville, was less happy, but philosophical; his display on combination drenches brought a less than overwhelming response. It seems people have heard more than enough about worm treatments.

Next year, John hopes to produce a more provocative display. [The mind boggles!—Ed.]

Niall Byrne of the Australian Animal Health Laboratory managed to weave some useful contacts with veterinary officers and the Rural Lands Protection Board into his steady stream of radio interviews — picking up an invitation to take part in their next seminar.

The Institute of Animal Production and Processing office supported the CSIRO stand again this year by funding the exhibition space and supplying Nancy Mills Reid and Keith Dash as roving ambassadors. As ever, any person Keith didn't already know, or get to know, simply wasn't worth talking to.

It was Keith who collected the many favorable comments made about our stand by Wool Expo organisers, other stall holders and the general public.

Armidale staff, too many to name, did all those non-glamorous but truly essential organisational tasks needed to get together a display — transport, display boards, freight, furniture, local liaison, publicity, hospitality ... and the list goes on.

The lesson learned from the highly successful CSIRO public relations and educational event is that a good display needs a mix of work in progress, work completed and products launched, plus a contingent of keen, well-informed and articulate staffers who can help with the questions.❖

Denise Stevens and John Lax observe the observers from their post on the CSIRO Fine Wool Project display at the 1991 Wool Expo in Armidale.

Colditz wins Ian Clunies Ross Medal

Dr Ian Colditz of the Division of Animal Health's Pastoral Research Laboratory in Armidale has been awarded the Ian Clunies Ross Medal.

The Australian College of Veterinary Scientists presented Dr Colditz with the medal for his work on sheep afflictions currently costing the Australian wool industry $200 million a year.

Dr Colditz graduated from the University of Queensland with First Class Honours in Veterinary Science in 1980. In 1983 he was awarded his PhD by the same university for his work on inflammation of the mammary gland (mastitis).

Dr Colditz has achieved international recognition in this field, and has done work both here and overseas on the body chemistry of skin diseases and asthma.

At the moment he is looking into the prospects for improving inflammatory and immune responses in the skin of sheep, to help protect them against fleece rot and fly strike.

The two are connected. 'Fleece rot creates an environment for flystrike,' Dr Colditz said.

'It's hard to say just how close we are,' he said, 'but I think within five years there will be a vaccine ready for field trials.'❖

Academy of Science International Exchanges 1992

Time is now short for some of the overseas awards and exchanges offered each year through the Australian Academy of Science.

The deadline for their first 1992 scientific exchanges with the United Kingdom is July 1 this year.

These exchanges are open to proposals for collaborative research in any field of natural science, basic and applied, including mathematics and engineering science.

Applicants should propose a project that has been developed in consultation with an appropriate host scientist in the United Kingdom. The expected outcome should be of value to Australian science or technology.

The deadline for the Bede Morris Fellowship Scheme, also offered through the Academy, which offers a grant for a scientific visit to France in 1992, is also getting close — August 1 this year.

To qualify for this grant, proposals should be in any field of natural science, basic or applied, or in a field that embraces cultural aspects of science. Again, arrangements should already have been made with host institutions.

Information is available from International Exchanges, Australian Academy of Science, GPO Box 783, Canberra, ACT 2601.
Or phone Bonnie Bauld or Judith Hlubucek on 06 247 3966.

A modern compendium of bureaucratic spells and incantations

Well, it may have taken us 65 years to get around to it, but CSIRO now has a guide to administrative procedures, and it looks like being a godsend. It's bound to make life a lot easier for administrative staff — and not just greenhorns, but some of the old hands as well.

It's called simply 'CSIRO Administration Guide', and it's in a fat, sturdy, co-operative ring-binder for easy updating, built to withstand both chronic browsing and acute panic-flipping.

Prominent plastic finger tabs showing the broad subject areas make it easy to find what you want, and the layout is clear and rational. The more bored you are by administrative procedures the better you should like it, since it offers the barest bones of what you need to do to achieve a desired result, without wordy embellishments or mystifying bureaucratic defences and sidetracks.

The new guide has three simple and worthy aims:

- to encourage efficiency;
- to promote sound practices; and
- to help train new staff.

Inspired by a similar but smaller project taken on by administrative staff at the CSIRO Marine Labs in Hobart, the guide was co-ordinated by a working group from Divisions, Institutes, the Corporate Services Department and Corporate Audit. Copies have already been sent out to all Divisional Secretaries and Laboratory Secretaries, with the request that they make it available to all staff.

The very back page is a user comment sheet, with address provided — so use it! Or you can call the Project Co-ordinator, Phillip Moore, on 06 276 6497, or Rebecca Savage, Human Resources Branch, on 06 276 6417.

CSIRO Benevolent Funds

Have you ever wondered whether there is some central body in CSIRO that looks after staff in times of special stress, relieving the pressure with financial aid or expert advice?

Well, there isn't. Not one central body, that is. What we do have is a loose grouping of four separate CSIRO Benevolent Funds, one for Queensland and the Northern Territory, one for New South Wales, one for Canberra, and one for the 'southern region' of Australia.

In each case the money comes from CSIRO staff who elect to become Benevolent Fund members by having a small amount taken out of their paycheck each fortnight. The four funds have slightly different membership charges, ranging from 20c to 50c per pay, and slightly different charters when it comes to financial help, some leaning more to interest-free loans and some to outright grants. But the overall policy is much the same in each case — helping CSIRO staff, past and present, and their dependants, get through the really rough patches.

Each fund has a committee, drawn from among its contributing members, whose job it is to assess all proposals for help. They judge each case on its merits, without regard to whether the person concerned has, or had, temporary or permanent employment with CSIRO, for example, or does or does not contribute to the fund. In these assessments they observe absolute confidentiality. This confidentiality extends also to any request for help made through representatives of the Benevolent Funds in various Divisions and Units.

It's hard to know exactly how much such a service is worth to people in times of need, but surely much more than it costs. If you aren't a member of one of the Benevolent Funds at the moment, you might consider adding to their ability to help by filling out an 'authority to deduct' for the pay office.

Your Personnel Officer or Staff Clerk will know who your local representative is, and the officials of each fund are listed under CSIRO Benevolent Funds (page 134) in the latest CSIRO telephone directory.

Head of Corporate Services leaves CSIRO

Mr Peter Langhorne, CSIRO's Director of Corporate Services for the last three and a half years, is leaving on Friday July 12. He will take on the job of General Manager of AUSTRADE's Corporate Affairs, based in Canberra, on the following Monday.

While his new position is similar to the one he has held in CSIRO, there will be greater emphasis on interaction with Ministers, the Parliament, government departments, national organisations and the Diplomatic Corps.

'I'm certainly looking forward to the new job,' Mr Langhorne said. 'Of course it will be very different in many ways, but in one way at least it will be familiar territory — AUSTRADE is going through changes very similar to those we went through here in CSIRO four years ago.

'They are responding, as we did, to a McKinsey report. It recommends they take a stronger role in providing access for Australia to overseas markets, place greater emphasis on overseas activities, and reduce administrative costs.

'As with us there will be staff cuts, restructuring, and a devolution of functions from the corporate centre out to the operating units.'

Mr Langhorne said his time in CSIRO had been most rewarding. 'It's been particularly exciting working with John Stocker,' he said, 'and the Executive Committee, and the Board, to make the changes necessary to get CSIRO well positioned for the future.'

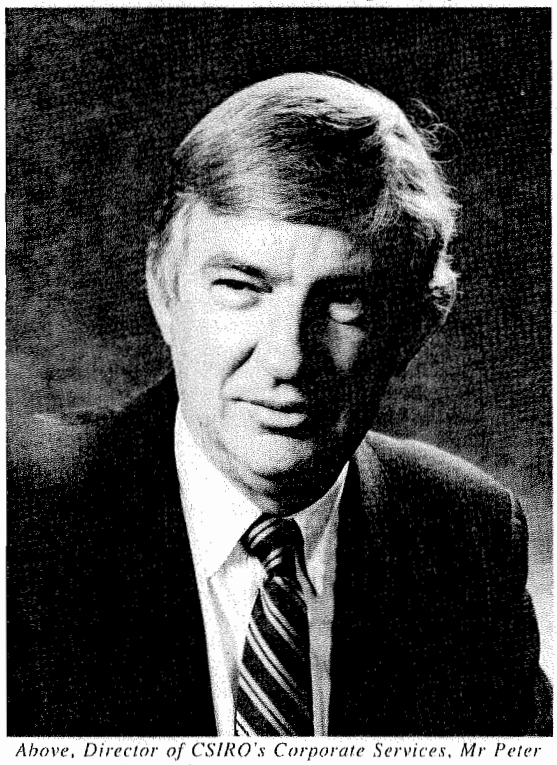
'And it is now well positioned. While there is certainly more work to do, and while the Organisation has to keep on its toes constantly, ready to leap forward and make changes on its own initiative, it is now well equipped to do that. Much better equipped than it was three and a half years ago.

'We should not underestimate the extent of the change. It's a very different organisation now than it was then — it's more responsive to the needs of industry and government, and it is working more closely with them. Its decision-making is less centralised. And it's certainly a more open organisation — willing to forecast its own performance and willing to have that performance measured.

'I really have appreciated all the help given to me, and to the Corporate Services Department, during the period of change.

'My personal view is that, overall, CSIRO really has a very high quality of administrative staff, both corporately and in the Institutes and Divisions.

'The Organisation needs to appreciate that, and tell them about it more often.'❖



Above, Director of CSIRO's Corporate Services, Mr Peter Langhorne, who leaves the Organisation on July 12.

Black Mountain Cup gets tougher

CSIRO's premier annual sporting fixture, the Sirocredit Black Mountain Cup, is scheduled for Friday, July 26.

The 5.6 kilometre fun run will be held on the usual course on the slopes of Canberra's Black Mountain and should attract many local and interstate runners.

Last year 'the Cup' was won convincingly by the Division of Forestry, with the Lucas Heights Research Lab second and the Division of Wildlife and Ecology third.

This year, however, the Canberra runners are expected to be under stronger pressure from Sydney and Melbourne teams.

For further information contact Gregory Heath at the Centre for Environmental Mechanics, 06 246 5578.

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CoResearch

No. 342 July 1991 CSIRO's staff newspaper

CSIRO AUSTRALIA

Science under a long white cloud?

New Zealand releases details of DSIR replacement institutes

Strange, isn't it? Just as CSIRO is putting its best effort (and 1.5 per cent more of its funds) into work it hopes will help break down barriers between disciplines and unify the Organisation's research in line with national priorities, New Zealand is galloping off in the opposite direction — separating its public science into autonomous units. Following its shock announcement at the end of last year that the 64-year-old New Zealand science body DSIR was to be disbanded, the New Zealand Government has now released details of the 10 institutes that will replace it. The announcement was made on July 11, following publication of the final report of the Science Task Group. The Government has adopted nearly all of the task group's recommendations.

Far from seeing the change as one that splits the work of the science community, the Minister responsible for Research, Science and Technology, Simon Upton, said a key principle of the change was to integrate the science effort vertically, allowing scientists to do research for one sector from basic scientific understanding through to applications in the marketplace.

'Each institute will be able to do research from DNA to the dinnerplate,' he said.

The new institutes will be set up as companies under the Companies Act. They will have full commercial powers, and their liabilities will not be underwritten by the Government.

However, Mr Upton said that the institutes had not been set up with ultimate privatisation in mind.

Each will focus on a particular industry sector or a natural resource area and have its own board of directors, appointed by the Government. The Government would be seeking appropriate people to serve on these boards, both from within New Zealand and from overseas, within the next two months, Mr Upton said.

The new scheme will come into being on July 1 next year. At the moment the Government allocates funds for public science projects through the Foundation for Research, Science and Technology, with research agencies bidding for this money against each other.

Mr Upton said the Government is considering the Science Task Group's recommendation that 10 per cent of the money in the pool be available to the institutes to spend on research of their own choosing. This would make it possible for them to 'swim against the tide' of central funding priorities, at least to some extent.

Government-funded science currently accounts for half of all New Zealand's scientific research, or NZ$255 million worth a year.

The new national institutes: composition and funding

National Institute of Pastoral Agriculture

— all of MAF Technology's pastoral and animal research, all of DSIR Grasslands, plus DSIR Plant Protection's relevant forage species research.

To receive revenue from the Crown of about NZ$65 million; from other sources, $5 million.

National Institute of Horticultural Products

— DSIR Fruit and Trees, MAF Technology's horticultural research, DSIR Plant Protection's horticultural weed, pest and disease control and molecular biology groups, DSIR's Palmerston North substation of the Applied Mathematics Group.

Crown $36 million; other sources $11 million.

National Institute of Field Crop Products

— all of DSIRCrop Research, DSIR Plant Protection's weed, pest and disease control in the field crop area, MAF Technology's crop research, Lincoln substation of DSIR's Applied Mathematics Group.

Crown $16 million; other sources $3 million.

National Institute of Industry Development

— all of DSIR Industrial Development, DSIR Chemistry's industry-related chemistry, much of DSIR Physical Sciences, most of Applied Mathematics.

Crown $27 million; other sources $10 million.

National Institute of Forestry and Wood Products

— essentially the same as the present Rotorua-based Forest Research Institute.

Crown $17 million; other sources $9 million.

National Institute of Environmental Health and Forensic Science

— Department of Health's NZ Communicable Diseases Centre in Porirua (formerly the National Health Institute), DSIR Chemistry's Forensic Science, health and parts of its environmental chemistry groups.

Crown $2 million; other sources (including government department contracts) $14 million.

National Institute of the Geosphere

— DSIR Geology and Geophysics, DSIR Physical Sciences nuclear sciences group (except for its atmospheric researchers) and seismology group, DSIR Chemistry's geochemical and geothermal groups, some of the staff of environmental chemistry.

Crown $21 million; other sources $6 million.

National Institute of Atmosphere and Water

— Meteorological Service's weather forecasting and research, DSIR Marine and Freshwater's oceanographic and river and lake research, the atmospheric research groups of DSIR Physical Sciences, MAF Technology's aquatic plants group.

Crown $21 million; other sources $31 million.

National Institute of Land Environments

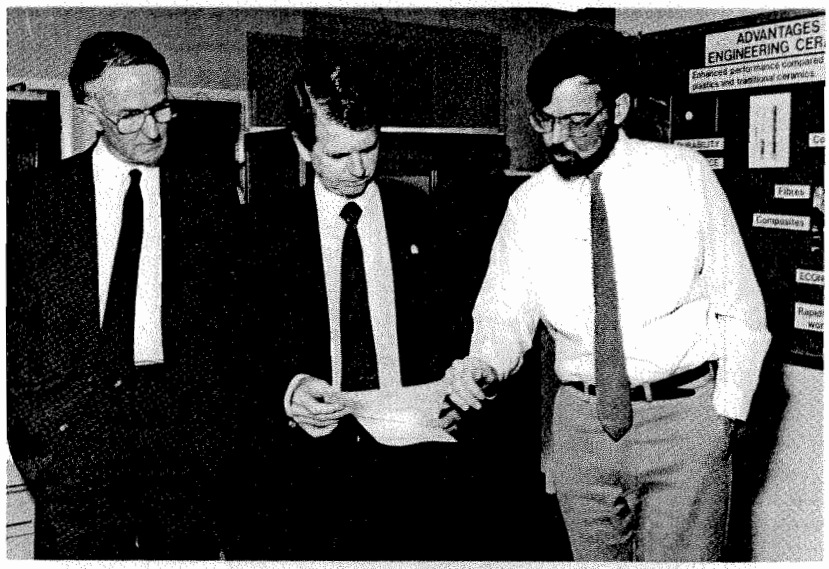
— DSIR Land Resources, collection of insects, arthropods, fungi and bacteria from DSIR Plant Protection, remote sensing group from DSIR Physical Sciences, plants for soil conservation from DSIR Fruit and Trees, most of the forest and wildlands ecosystem division from the Forest Research Institute, rabbit and land management research from MAF Technology.

Crown $22 million; other sources $7 million.

National Institute of Social and Economic Development

—The Science Task Group has suggested this be formed by combining the NZ Planning Council and DSIR Social Sciences. At present the Government has agreed that it will consist of the DSIR Social Science Unit alone.

Crown $2.3 million; other sources $260,000.❖



The most important job in New Zealand? Dr John Stocker in New Zealand last month discusses DSIR's advanced ceramics research with, left, Dr Dick Clarke, Assistant Director-General of DSIR, and, right, Dr Vaughan White, DSIR Chemistry. Dr Stocker was in Wellington to attend and speak at Scitech 2000, an important New Zealand science conference with overseas speakers including Bruce Smith of the Brookings Institute in Washington DC and Akito Arima, President of Tokyo University.There was much lively discussion on the restructuring of New Zealand's scientific work, and Dr Stocker said scientists themselves should be the ones to manage science and set the priorities for research. 'Any structure set up apart from scientists to decide science priorities,' he said, 'risks disjunction from real science and a lack of accountability.' Speaking of the implications of the changes in the field of international scientific collaboration, he said, 'In the past the great bulk of our collaboration has been with DSIR, so obviously I am concerned that such a useful, successful and respected organisation has been disbanded and replaced by the new institutes. Dr Stocker also speculated on the likelihood that the chief executives of the new institutes would tend to get together more and more often as time passed, perhaps eventually formalising their relationship into a new, over-arching scientific body. He even ventured to suggest a name for the integrating body — DSIR.

Australasian science

Making the right connections

I crossed the Tasman last month to peep under the long white cloud.

My trip began with a tour of our sister organisation, DSIR, magnificently hosted by my opposite number over there, Mike Collins, and I had meetings with both of the Ministers responsible for Science in New Zealand, Simon Upton and Denis Marshall.

I also had the chance to attend and talk at Scitech 2000, a major science conference in New Zealand. A number of New Zealand scientists and business leaders had the chance to comment on the Government's proposed restructuring of science administration.

A dry Yorkshireman, Professor Trevor Hatherton, proferred one of the loveliest, and aptest, descriptions of the work of a scientific researcher I have ever heard. The research process, he said, was one of endless crawling about in the dark through haystacks, finding only needles.

'But every now and then,' he said, 'just every now and then, you come across the farmer's daughter.'

OK for him, but a Chief Executive has to be careful. It occurred to me that, delightful though this was, I might be accused of sexism if I passed it on. So I jotted in, first, '... farmer's daughter and son' and then, feeling unaccountably uneasy about that one, amended it to ' ... farmer's daughter and several of her friends of both sexes and various religious persuasions and racial backgrounds, some with handicaps'. But somehow that didn't work either. Ah well, I leave it with you ...

You probably remember the December issue of *CoResearch*, in which the dissolution of DSIR into a number of Crown Research Institutes was announced, and in which my column posed the question as to whether New Zealand was shooting itself in the brain.

Scitech participants expressed a variety of opinions about the massive upheaval in New Zealand science, involving not only DSIR but the university research granting system and the Ministry for Agriculture and Forestry.

What is important now for us is to establish how CSIRO will find its way through the new structures in New Zealand science to continue and expand some of the very significant and important collaborations we have with colleagues there.

The Ministers with whom I spoke agreed that it would be eminently sensible for our two countries to do more collaborative research.

One idea that Mike Collins and I began to hatch was to identify a couple of areas where we do want to increase collaboration and then organise symposia to get the ball rolling.

The first one I'm looking at, with Brian Walker and Hugh Tyndale-Biscoe of the Division of Wildlife and Ecology, and other groups in CSIRO, is vertebrate pest control. We have in Australia a very important and focused effort in this area, particularly with rabbit and fox control.

Our approach is to look at using the myxoma virus, in the case of rabbits, either as a pathogen or, more probably, to carry the genes encoding antigens to immunise the pests against their own fertility proteins — a kind of 'immunosterilisation' program.

I noticed in New Zealand that they had a very different approach, using pheromones and other chemical signals either to deter vertebrate pests or to attract them to baits.

It struck me that the two approaches might be combined in a complementary way, and I want to organise a symposium that will bring together our people and the New Zealand scientists to develop this idea further.

New Zealand already has a collaborative project with us, in our Animal Health Laboratories, looking at the properties of a hemorrhagic viral disease of rabbits, and I think our two countries could afford to make much more of such collaboration.

Possums, for example, are a major problem in New Zealand, and it would be fitting if the country from which they came could identify some pest control mechanisms. Dr Tyndale-Biscoe has made a proposal to the New Zealand government.

Another possible area is materials science, a growing field in which both DSIR and CSIRO are involved.

Then there's atmospheric research. There is already a considerable and successful collaboration between our Division of Atmospheric Research and several DSIR Research Institutes, both in the North Island, where they concentrate on tropospheric research, and in the South Island, where the field is stratospheric atmosphere composition. Here again, I think a further strengthening of that collaboration, involving climate change, atmospheric composition, and the greenhouse effect, might pay excellent dividends.

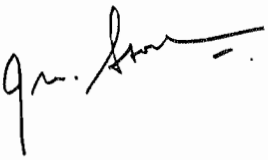
So there we have three areas that seem to me to be ripe for strengthened collaboration.

The vertebrate pest control topic is one the media here in Australia have taken up of late, as indeed they have a great many CSIRO programs and activities — all good, healthy grist to our Project Ambassador mill.

And it *is* a mill that still needs grist. It's vital that we continue to bring home to Australians the importance of scientific research in general, and CSIRO's contribution in particular, in realising national objectives. All the decisions made about CSIRO — including the very important funding decisions — are materially influenced by what people are saying out in the community about our organisation.

In recent weeks Lindsay Bevege of the Public Affairs Unit has been involved in a promising initiative: he's been talking to the production team of *A Country Practice* about the work of CSIRO. They *are* interested, and it looks as if a CSIRO scientist may soon appear as one of the characters in that high-rating and very influential series.

Meanwhile, back on the farm, the Public Affairs Unit has also just completed a snapshot internal phone survey that seems to show that most staff have a good basic understanding of our recent national priorities exercise. However, nearly all said they would like to hear more about it, preferably from their supervisors and *CoResearch*. Some details of the projects that attracted extra funding in the recent round of Board allocations are provided in this issue.



Letter to the Editor

Dear Editor,

I was interested to be given a copy of the April 1991 issue of *CoResearch* [*No. 339*] and to see the photograph on page 4–5 which, I presume, was the equivalent at the time of a CSIRO Advisory Committee.

Many of those in the photograph were great people. In fact, I wonder if CSIRO has ever subsequently had such a strong Committee. I was particularly interested to see mention of Mr E.H. Flack. If I remember correctly a person of that name won two gold medals for Australia in Athens in 1896. Was he the person who was the Olympian? What was his relationship with Science and Industry? What was his position at the time? If it was the Olympian, you may wish to consider publishing a brief note about him.

In fact, some brief notes about many of those people might be interesting. Messrs. W.H. Gepp, E.J. Horwood and Professor E.W. Skeats made great contributions to the Mining Industry. Professors E.J. Goddard and B.D. Steel have had buildings named in their honour at the University of Queensland and there are many others who are well known.

A.J. Lynch
Head of Department
Department of Mining and Metallurgical Engineering
University of Queensland

Yes, it is the same Mr Flack, apparently.

My source, Ron Clarke, writing in the Australian Dictionary of Biography, says that Flack's victory in the 1500 metre race at the 1896 Athens Olympics was a popular one because the Americans had been dominating the competition. He also won the 800 metres race. He was running second in the marathon when he collapsed and had to be taken to the stadium by ambulance to watch the finish of the race.

Born Edwin Harold Flack in 1873 at Islington East in London, he had come to Melbourne with his family in 1878.

He was educated at Melbourne Church of England Grammar School before returning to England to gain formal qualifications as an accountant (FCPA and FSAA).

With his father and later his brother Henry he built up the firm of Flack and Flack, accountants, with branches in Sydney, Brisbane, Adelaide and Perth in Australia, as well as Auckland and Wellington in New Zealand.

Apart from his role in the formation of CSIRO, Flack was a director of several companies. He died after an operation in 1935, having suffered from heart trouble for some time. He never married.—Ed.

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Ah! That's better!

Earlier this month the Division of Entomology released a cunning new device for controlling buffalo fly on dairy cattle. Instead of chemicals it makes use of the buffalo fly's sensitivity to light and heat.

Infestation of cattle by this pest has been a constant headache in the northern areas of Australia. They suck the cattle's blood, and the irritation causes stress. The cattle try to get rid of the flies by rubbing against posts and trees, giving themselves sores in the process. The disturbance to their feeding and resting, and the energy they use in their frantic efforts to rid themselves of the flies, lower the cattle's general condition and their milk production.

Over the years the fly has developed widespread resistance to most synthetic pyrethroid pesticides, increasing the urgency of the need for a chemical-free method of control.

The new trap offers maximum fly control with minimum interference to cattle movement or management on the farm, and needs very little maintenance.

The flies feed on their hosts about 18 times a day, and need to stay on them for about two days before they can lay any eggs in the cattle's dung. The traps reduce fly breeding by killing them before this happens.

The trap is simplicity itself. It consists of a tunnel built over a cattle race, tightly covered with a 'solarweave' greenhouse film. As cattle pass through the trap the flies are brushed off by weighted curtains.

Then the flies are attracted to the natural light coming from the top of the trap, where they are killed by the high temperature generated by the 'solarweave' film's exposure to sunshine.

The traps are placed at strategic points, such as the entry to the dairy or the water source.

According to Bob Tozer, one of the development team, the traps are environmentally safe and far more labour-efficient than control by pesticides. He said that in field trials on five dairy properties in south-east Queensland, not one dairy farmer had had to resort to pesticides during the whole of the buffalo fly season.

He also said that judging by the immense interest shown in the trap during its development, industry adoption should be rapid.

The cattle, too, showed great interest in the development, many coming back repeatedly to try to go through the trap again.

The Division developed the trap with help from the Dairy Research and Development Corporation and the Queensland Dairy Farmers Organisation. CSIRO has patented the design and signed an agreement with Country Industries Australia Pty Ltd, a Queensland manufacturer of livestock-handling equipment. The agreement gives the company exclusive rights to manufacture and market the unit world-wide.

The trap is a practical application of the results and understanding gained from a detailed ecological and behavioural study of the buffalo fly by the Division.❖

Safe but exciting?

You might not think a seminar on electrical safety standards would arouse a lot of excitement. Important, yes, but interesting enough to draw big crowds? Or even small crowds ... ?

Well, John Bennett, an electronics engineer who supervises the electronics section of the Division of Atmospheric Research, was nearly trampled under in the rush when he set one up recently.

More than 200 people, ranging from Assistant Chiefs to apprentices, and hailing from nearly every Division in Victoria, responded to his invitation.

Rather than knock anyone back, he divided the eager participants into four groups and repeated the seminar for each group separately.

It *was* an important topic: a new CSIRO policy on electrical safety (Circular 90/10) makes it mandatory to observe certain Australian Electrical Standards, and it turned out staff were keen to come to grips with those new standards.

Mr Bennett had spotted the need for a seminar to help with that and had arranged with the Electrical Approvals Board of the State Electricity Commission of Victoria to send him an expert.

The expert was Bill Curry, Chairman of the Standards Australia Committee on Electrical Approvals Standards and the IEC Subcommittee on Safety of Electrically Operated Farm Appliances.

Mr Curry was treated to an enthusiastic response from CSIRO staff during the seminars. He is a fount of knowledge on his topic, and even something of a celebrity, being used as an expert witness in inquiries and court cases involving deaths caused by electricity.

Queen's Birthday brings many happy returns

There were five CSIRO people in this year's Queen's birthday honours list.

OFFICERS

Professor Adrienne Clarke, of the CSIRO Board, received an AO for her service to science and industry, particularly through the application of biotechnology.

Mr Ray Perry, former Chief of the Divisions of Groundwater Resources and Land Resources Management, was also awarded an AO, in recognition of his service to science and to the environment, particularly through land resources management.

MEMBER

Dr Alan Donald, Director of the Institute of Animal Production and Processing, won an AM for his service to primary industry in the field of animal health.

MEDALS

Mr David Packham, formerly with various units of CSIRO, including the Bushfire Unit, was honoured with an OAM for his service to the development of aerial ignition techniques for bushfire management.

Mr Hugh Waring, formerly with the Division of Forest Research, also received an OAM. His was for service to soil science, forestry and education.

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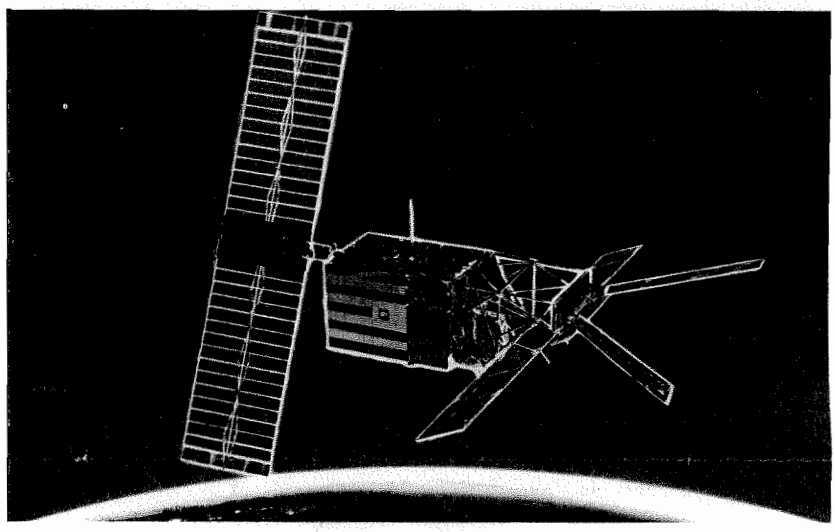
Now *that's* high technology



A little before noon on Wednesday July 17, from a launching site in French Guiana, some very sophisticated fiddly bits took off for outer space in the European Space Agency's ERS–1 satellite aboard an Ariane rocket. A lot of those bits were Australian, and a lot of the fiddling was done by CSIRO. CSIRO is co-ordinating 21 Australian experiments, and one New Zealand one, to be allowed by the European Space Agency (ESA) to receive data from the satellite. The satellite will orbit the earth at a height of 780 kilometres, relaying information for scientists studying global environmental problems such as the greenhouse effect. This information will be received at ground stations around the world, including the new Tasmanian Earth Resources Satellite Station (TERSS) now being built in Hobart, and another at the Australian Centre for Remote Sensing (ACRES) in Alice Springs. Photo courtesy of COSSA.

Wran addresses CSIRO union

Chairman of CSIRO, Neville Wran, addressed the Officers' Association Annual General Meeting Dinner on Friday June 14 at the CSIRO Minerals Research Laboratory at North Ryde in Sydney. The new Science Minister, Ross Free, also attended.

Mr Wran remarked that there were not many organisations in which the Chairman of the Board could feel so comfortable talking to a gathering of unionists. He said that 'unique feature' of CSIRO was one of the reasons it had been able to 'weather the storms of the last decade with our optimism and enthusiasm intact.'

Speaking of last October's wage case decision, he said 'It is a measure of our maturity as an organisation that we were able to go as one lobby to the Industrial Relations Commission. United as we were, we were able to mount a case that was not just convincing, but irrefutable.'

The package CSIRO had gained, he said, 'will mean that salaries are linked to performance, and it does away with the old system of automatic annual increases.'

'It moves the emphasis away from formal qualifications and toward each individual's proven ability to do the job at hand.'

Another important change to the Organisation, Mr Wran said, was the recent restructure of the Consultative Council, which would 'give people at every level more say in the Council's decisions.'

The Chairman praised the Officers' Association for having had, throughout its history, a much wider role than mere industrial advocacy.

'I was especially pleased,' he said, 'to see the Officers' Association's wholehearted adoption of Project Ambassador.

'Project Ambassador is up and running, and it will become a permanent feature of CSIRO. It is important for each and every one of us to 'communicate with the community' about what science is all about and why it matters. And I believe that talking publicly and simply about what CSIRO does is a very good way of expanding our own understanding.'

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Priority projects for this year

Last month's CoResearch carried the news that the Board had approved John Stocker's selection of projects for extra funding from the pool of money created by the 1.5% levy. Though that selection is only one step in the continuing priority-setting process, it is a first step, and CoResearch is interested in finding out how staff are responding.

From a very small internal phone survey carried out this month by the Public Affairs Unit, it seemed that most staff would like to know more about the process. CoResearch was the most popular choice for preferred informant, though supervisors ran a close second. So here goes!

In case the information hasn't yet reached you, here are some details on each of the projects that succeeded in attracting money from the new fund. Next month's CoResearch will ask you to respond to a questionnaire (being prepared by the CSIRO Consultative Council and the Communication Working Group) designed to find out what you think of the whole thing.

The funding available centrally for recurrent redirection in 1991–92 — the 1.5per cent levy — was $4.896 million, including $367,000 from the Corporate Centre.

The projects that will benefit from these decisions, as approved by the Board, are described below. In all cases the priority funding will be only a small part of the total funding for the work described.

Improving the quality and productivity of radiata pine and eucalypt forests ($350,000)

This effort is focused on the development of objective methods for rapid assessment of wood quality; shortening of tree breeding cycles; and genetic modification of tree quality for wood production purposes. The potential returns from increased yield and improved wood quality are high — initial returns from pine breeding are in the order of 15–18 per cent sustainable yield and reassessment of pulping qualities of eucalypts is estimated to return $460 million. Divisions involved: Plant Industry; Forestry; Forest Products (Institute of Plant Production and Processing).

Genetic Improvement of wool quality ($150,000)

The aim here is to develop and apply improved techniques in sheep breeding, measurement of wool characteristics, wool processing and fabric quality assessment. These will be used to select and breed sheep with wool quality characteristics better matched to the requirements of the changing wool market. This should help Australia to maintain or improve its share of the world textile trade. Divisions involved: Animal Production; Wool Technology (Institute of Animal Production and Processing).

Upper volume wool marketing initiatives ($180,000)

Medium diameter wool constitutes the bulk of the Australian wool clip and stockpile. This research is aimed at increasing demand for such wools and regaining lost market share. This will be done first by blending wool with fine synthetic fibres and reducing properties causing prickliness. A second research goal will be to improve the shape-keeping ability and design of knitted woolen fabrics. Division involved: Wool Technology (Institute of Animal Production and Processing).

Fat-modified foods ($100,000)

This research aims to design healthier food components, and products with reduced or modified fat components, while retaining the sensory appeal of fat. Put simply, to make low-fat foods tastier. Divisions involved: Food Production, Human Nutrition (Institute of Animal Production and Processing).

Mineral exploration ($284,000)

The main thrust of this work is to understand the way in which hidden ore bodies have their 'signatures' (a characteristic pattern of outward) modified by the deep weathering that occurs across most of Australia; how those signals can be characterised, and how they may be detected. Division involved: Exploration Geoscience (Institute of Minerals, Energy and Construction).

Metalliferous mining ($340,000)

The emphasis is on the forward planning of large mines in terms both of physical design and of total stress analysis, together with the definition of grade and of geological structure. The results will be applied to both underground and open-cut mines to improve recovery, safety, costs and effectiveness.

The research will include the criteria for design of high-production deep open pits, which are expected to be one of the mining technologies to be adopted in Australia.

Division involved: Geomechanics (Institute of Minerals, Energy and Construction).

Processed minerals ($545,000)

In non-ferrous mineral treatment research will focus on separation of valuable minerals with improved recovery and improved classification methods.

In alumina production the research is aimed at improving plant efficiency through fundamental understanding and modelling of the process together with on-line monitoring and control.

In heavy minerals processing research is focused on mineral sands processing, including that of the more recently discovered fine-grained deposits.

Research is also aimed at developing a caustic magnesia product, derived from magnesite, that is acceptable to the effluent treatment market.

Divisions involved: Mineral and Process Engineering; Mineral Products; Building, Construction and Engineering (Institute of Minerals, Energy and Construction).

Basic metal products ($331,000)

The strategic research will be to identify and create improvements in aluminium smelting; in the high-intensity smelting processes on which SIROSMELT and ISASMELT are built; and in the production of magnesium metal. An increase in the basic understanding of the chemistry, metallurgy and fluid dynamics involved will yield considerable advantages in these processes in the medium to longer term. Divisions involved: Mineral and Process Engineering; Mineral Products (Institute of Minerals, Energy and Construction); Materials Science and Technology (Institute of Industrial Technologies).

Power generation ($120,000)

This research will provide gasification yield data for key Australian coals for use under special conditions for electricity generation. This will make possible a reduction of greenhouse gas emissions from coal-fired generators of up to 20 per cent and a saving in coal costs of $40 million a year. Divisions involved: Coal and Energy Technology; Mineral and Process Engineering (Institute of Minerals, Energy and Construction).

Solid oxide fuel cells ($200,000)

This project aims to develop the solid oxide fuel cell running on coal gas, natural gas or methanol fuels, with combined heat and electricity generation capability.

Total project expenditure of $5 million a year, with $3 million of that from external sources, is envisaged.

Division involved: Materials Science and Technology (Institute of Industrial Technologies).

Automotive technology centre ($150,000)

The role of this centre will be to identify and develop projects in collaboration with the automotive industry.

The centre will be funded jointly by CSIRO, the automobile industry and Federal and State governments.

Division involved: Manufacturing Technology (Institute of Industrial Technologies).

High-temperature resins ($150,000)

This project involves research conducted under the Memorandum of Understanding with Boeing.

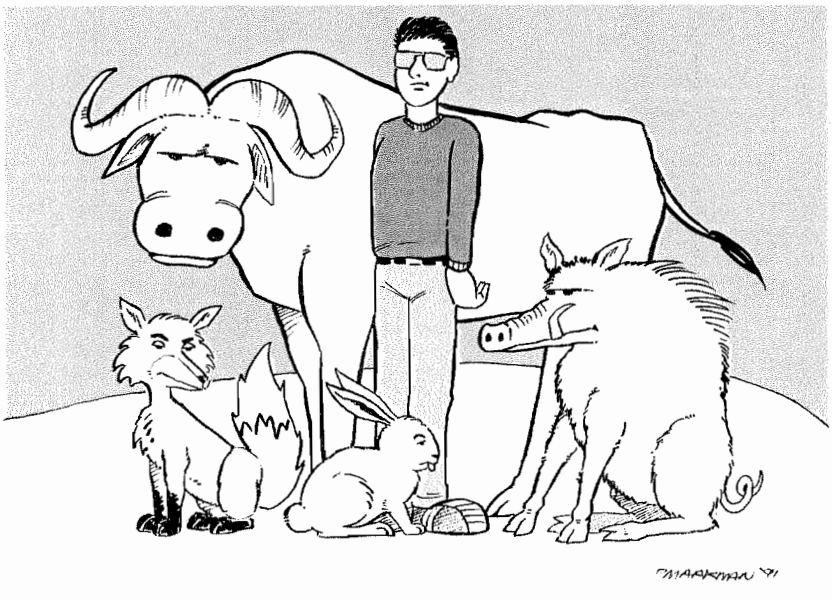
The major market for these resins, stable at high temperatures, is in the fast growing aircraft component export sector. Other potential markets with possible shorter term returns include circuit boards, high-temperature films and mining equipment.

Divisions involved: Chemicals and Polymers (Institute of Industrial Technologies); Food Processing (Institute of Plant Production and Processing).

PLANS: program for LANS (local area networks) and networked services ($350,000)

PLANS is a major initiative by the Institute of Information Science and Engineering to target the telecommunications services sector. The program is built on, and exploits, trends and rapid shifts in personal communications, portable computing and the use of computers in communication.

Initially the central focus of PLANS will be a broad-band wireless local area network with more than a hundred megabits per second of capacity. The technologies needed to deliver such a network include millimetre-wave antennas, gallium arsenide integrated



Australia's five worst introduced vertebrate pest species, as seen by Peter Markman

circuits and advanced signal and image processing.

Total expenditure will be in the order of $2 million a year.

Divisions involved: Radiophysics; Information Technology; Mathematics and Statistics; and the Australia Telescope National Facility (Institute of Information Science and Engineering).

Coastal zone ($600,000)

A major component of the increased effort in the category called Environmental Aspects of Economic Development will be the co-ordination and enhancement of coastal zone research into a strongly focused program for improving the quality of coastal zone management in all States of Australia.

There will be consultations with State and local government management agencies before any major effort is started in any particular location.

Divisions involved: Environmental Mechanics; Fisheries; Oceanography; Water Resources; Wildlife and Ecology (Institute of Natural Resources and Environment); Soils; Tropical Crops and Pastures (Institute of Plant Production and Processing); Coal and Energy Technology (Institute of Minerals, Energy and Construction).

Waste Treatment ($606,000)

Some half-dozen projects were proposed. These are being evaluated by a task force chaired by Dr Tom Spurling. This task force will propose a strategy for waste treatment research in CSIRO.

The strategy will deal with treatment of wastes, rather than a determination of the fate and impact of waste in the environment. This latter activity will be addressed in this year's round of the priority process.

Divisions involved: Manufacturing Technology; Chemicals and Polymers (Institute of Industrial Technologies); Soils (Institute of Plant Production and Processing); Wool Technology (Institute of Animal Production and Processing); Mineral Products (Institute of Minerals, Energy and Construction); Water Resources (Institute of Natural Resources and Environment).

Matching land use to forestry practices ($80,000)

This funding is for the enhancement of existing work on incorporating better environmental, tree-growth, and soils data into decision support systems for forestry management, taking into account timber production, wildlife habitat and biodiversity considerations. Division involved: Wildlife and Ecology (Institute of Natural Resources and Environment).

Sustainable grazing ($180,000)

This proposal aims to model the interaction of environmental and economic factors that affect the long-term stability and productivity of grazing systems on the temperate sown pastures of eastern Australia.

Particular emphasis will be on fertiliser use and the potential of new plants, plant management and supplementary feeding.

Decision-support systems incorporating the results of the modelling work will be develop-ed for graziers in the NSW and Victorian wheat and sheep and high-rainfall grazing properties.

This project is funded subject to the successful integration of the work into the CSIRO Land and Water Care Program. Dr David Smiles has been asked to facilitate this.

Division involved: Animal Production (Institute of Animal Production and Processing).

Biological control of vertebrate pests ($180,000)

This project aims to control vertebrate pests, such as rabbits and foxes, by reducing their fertility. Division involved: Wildlife and Ecology (Institute of Natural Resources and Environment). (See special feature in last month's *CoResearch*, No. 341, page 4.)

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A spokesperson for the CSIRO Board told *CoResearch* that the new process for identifying priorities and supporting them offered a flexibility that was 'essential'. The process would also offer greatly increased opportunities for promising research programs, put forward from 'the bench', to be supported by the Chief Executive, the Directors and the Chiefs from the funds they now had under their control.

The Board was 'very supportive of the methodology and the processes', seeing it all as 'very transparent and objective'.

However, the spokesperson admitted, the Board recognised that the process was currently seen as very 'top-down', and every effort was being made to achieve a more balanced procedure in future years.

CSIRO Chairman Neville Wran said, 'the intention now is to find out just what our scientists feel they could do to make the whole process work better; but a process involving the shifting of resources can never be expected to please everybody'.

That intention should be at least partly addressed by the questionnaire in next month's *CoResearch*.

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Don't wait, festivate!

Last month's CoResearch reported that Australia was to have its first-ever national science festival in April 1993. The event, to be held in Canberra, was announced on June 16 by the new Federal Minister for Science and Technology, Ross Free. One of CSIRO's own staff, journalist David Mussared of the Public Affairs Unit, has been closely and keenly involved with the project from the beginning, and CoResearch thought readers might be interested in his account of how it's all shaping up so far ...

CSIRO is one of the key organisations behind the Australian Science Festival. Planning has already begun, and a co-ordinator should be appointed by the time this issue goes to print.

But what exactly is a Science Festival? What happens? Who pays for it? And why should we bother?

The answers to all of those questions depend very much on the scientific community itself. The Festival is a chance for science to 'come out'. It is a chance to show that scientists are an integral and necessary part of the community, and that what science does is interesting and fun. It is a chance for science to celebrate.

Ideas have been suggested ranging from a 'fuel-efficency boat race' on Lake Burley Griffin to a Science Fiction film festival; from major forums on science policy to a 'Science Ball'. The Biota science and environment festival staged by seven of CSIRO's Canberra Divisions will become part of the larger event.

The Festival will cover the full spectrum — from serious scientific conferences to fun events for families and non-scientists.

The possibilities are limitless. Events may deal with medical science, environmental science, food science, sport science, forensic science, space science, industrial science, science in mining, agriculture, brewing and many other industries. The Festival will not shy away from controversy, and it will be about why we do science as much as it is about what we do.

Edinburgh, Scotland, has hosted a very popular science festival every year for the past three years. I would like to see the Australian Science Festival also become a regular event, although there are differing thoughts on whether it should be annual or biennial.

Probably the hardest thing is that scientists are not trained performers, and science is not really scripted to be performed. But the Edinburgh Festival has come up with many creative ways of presenting science, and of involving the public.

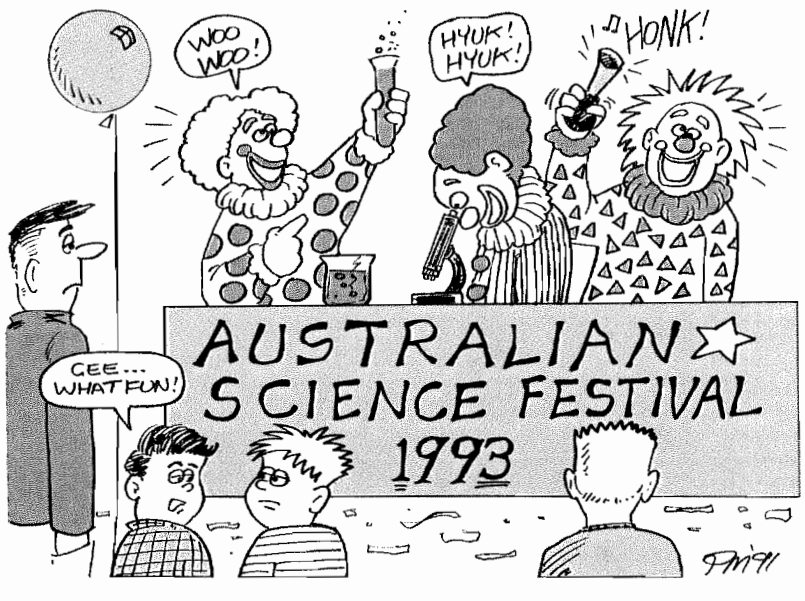
The vital question, of course, is who pays. The Australian Science Festival does not have a large pot of money to dole out. All the money we have raised so far has already been allocated to employing a co-ordinator and running a planning study. Instead we hope Australia's different scientific institutions and industries will come up with their own ideas, and their own funds and sponsors, which will become part of the wider Festival.

We are seeking ideas, suggestions, offers of help and constructive criticism from all over. I would like the science community to do its own thing. If you think you can play a part, please let me know.

We chose Canberra as the venue for two very simple reasons — because we wanted the event to have a national focus, and because so many national research institions have their headquarters or a large presence in Canberra.

I suppose I should state my bias. I represent CSIRO on the Festival's Steering Committee. I think the Festival is a great idea. For the past six months I've been working within CSIRO and with other institutions to help get it off the ground.

The Steering Committee is made up of representatives from CSIRO, the National Science and Technology Centre and the Australian National University. Of course other institutions and companies will also be involved. The co-ordinator's position is funded by a grant from the Science and Technology Awareness program of the Federal Department of Industry, Technology and Commerce, and the Festival will be managed by an ACT group called Canberra Festival Inc. A private sponsor, Prime Computer of Australia, and CSIRO's Public Affairs Unit are funding a planning study.❖



Up-north up-date

On the wrong day it would be easy for the academythical Man from Mars to get the impression that the letters CSIRO are a mere formal device designed to bundle together some 35 divisions, units, laboratories and centres whose scientific work has, in fact, no real connection. Well, if the Man from Mars might think that — and we all know he's no fool — then it's a safe bet the odd Man from Earth might think so too.

Beef 91 exhibition

Not, however, if he was among those who went to the recent Beef 91 exhibition in Rockhampton. The Divisions of Tropical Crops and Pastures, Tropical Animal Production, Food Processing, and Soils, got their various acts together to present a unified display at this important industry event.

The theme of that display — 'CSIRO Beef Research: On Track' — gave graziers and other industry interest groups a glimpse of past triumphs and possible 'coming attractions'. Land and water care projects, along with pasture and animal production initiatives, were integrated with research that highlighted the processing and marketing of meat products.

Key research efforts were outlined in the four sections of the display:

- keeping the herd profitable;
- keeping the land productive;
- keeping the product right;
- keeping an eye on the future.

Assistant Chief of the Division of Tropical Animal Production, Dr John Vercoe, said the display was a big step forward for CSIRO's northern Divisions.

'By pooling their resources, Divisions and Institutes were able to present a more unified image of CSIRO research in the north,' he said.

Jenni Metcalfe, Communication Manager for the Division of Tropical Crops and Pastures, agreed with Dr Vercoe.

'We wanted to avoid the confusion that much of the public has about CSIRO's organisational structure,' she said. 'People really don't care what Division we're from, as long as we're doing relevant research.

'And most of the people who attended our display were very impressed with the direction CSIRO's beef research is taking.'

The Divisions that took part hope to repeat the exercise in September at Toowoomba's Farmfest, a rural trade expo that attracts more than 80,000 people each year.

What with all these, and the forthcoming CSIRO exhibition at Brisbane's August show — the 'Ekka' — it seems that Project Ambassador is alive and well in the north.

John Stocker's speech

Speaking of Project Ambassador, CSIRO's Chief Executive Dr John Stocker was also in on the Rockhampton public relations push. He gave a speech to delegates at the Beef 91 conference in which he warned beef producers they would need to look to research and development that went beyond the farm gate if they wanted to stay competitive.

He said the beef industry must continue to deliver the products consumers want, which means monitoring the health and nutrition qualities of beef products for domestic and international markets, as well as keeping up with overseas trends.

'Owing to the removal of beef quotas, demand for our beef products with countries such as Japan has entered a new era of uncertainty,' Dr Stocker said. 'Much needs to be learned about Japan's consumer preferences in order to keep the Australian product competitive.'

Dr Stocker said CSIRO studies of food preferences in Japan will allow Australian companies to tailor their products in a bid to reap benefits on both sides of the farm gate.

'The continued supply of quality livestock,' he said, 'will be vital to support any change in direction brought about by consumer demands.'

(CSIRO Occasional Paper No. 5, *The Australian Beef Industry: facing up to the future*, is an edited transcript of Dr Stocker's address to the Beef 91 Conference and is available from the CSIRO Bookshop.)

Beef review committee

In late April a Review Committee was set up to look at CSIRO's research on tropical beef production. It is chaired by Dr Alan Donald, Director of the Institute of Animal Production and Processing, and includes Mr Jim Miller, Director-General of the Queensland Department of Primary Industry, and Mr Wally Peart, Chairman of the Division of Tropical Production's Advisory Committee.

The Committee has already caused quite a stir. Its work has involved an exhaustive consultation process, with over fifty public written submissions already received. The team has visited Townsville, Rockhampton and Brisbane to hear the views of thirty-three individuals and groups from a wide cross-section of livestock industries, the community, universities, the Department of Primary Industries and CSIRO staff.

Local hopes

Rockhampton Mayor Alderman Lea Taylor said that in its submission the city council strongly supported the continued presence and strengthening of CSIRO's Tropical Research Centre.

'The centre is a vital component of the beef industry, providing a focal point on research for northern cattle producers,' he said.

The editorial of the Queensland Morning Bulletin took the visit by the Review Committee to Rockhampton to mean that the city was a 'hot contender ... for the establishment of Australia's first genuine beef industry research institution.'

and fears

The response in Townsville, however, was less sanguine. In fact the Minister for Science and Technology, Ross Free, put out a press release on July 4 to allay fears for the survival of the CSIRO Division of Tropical Animal Production facility in Townsville, expressed to him by the Federal Member for Herbert, Ted Lindsay.

Mr Free said that no decision had yet been made, and that he had reassured Mr Lindsay that the review was taking particular account of local concerns that he and other parties had raised.

The Committee is expected to release a draft report by the end of August.

The Townsville facility, at the Davies Laboratory, is one of the three Queensland locations of the Division of Tropical Animal Production. The number of staff there is currently thirteen, out of a total Davies Laboratory complement of about eighty.

Mr Free emphasised that Divisional reviews are part of normal operating procedures within CSIRO. They frequently take place on the retirement of a Chief — in this case Dr David Mahoney.❖

Caption competition

Another bumper crop of entries for the caption competition! This thing is starting to get out of hand.

The winner is Bill Zimmerman, who has just left CSIRO's Science and Careers Education (née Education Programs) to return to teaching. Bill's submission was 'Shall we freeze the whole body, or just the head?'

On the freezing theme there were also '... and maybe some day we will have the technology to revive you as a Cabinet Minister' from Imants Liepa, Division of Coal and Energy Technology, and ' ... and will it freeze budgets too?' from Bob Couper, Division of Building, Construction and Engineering.

Then there was boiling, with Peter McGauran musing 'Now did I turn off the iron this morning?' from Lynn Pulford of Science and Careers Education, and 'Hubble, bubble, toil and trouble/ fire burn and cauldron bubble/ Now, who brought the bats' wings?' And spinning, with 'Ah, so this is how fairy floss is made!' from Jan Habel, Building, Construction and Engineering. There was art ('And here we have a simulation of your fading political careeer': Alan Andersen, Wildlife and Ecology); politics ('Well, sir, you did say we should agitate for greater public recognition': Alan again); and even magic ('... and the genie will now appear to grant you any wish, Barry': Roger Lipscomb, Radiophysics. All three topics were perhaps covered in the caption sent by Franz Spranger of the Editorial Services Section in East Melbourne: 'Keen interest is shown by Government and oil company officials in CSIRO's perpetual motion machine.' And there were more ...

But the funniest thing I've read recently was sent not to me but to the new communicators' newsletter, 'Letterbox', and though I try not to swipe things from other publications I really can't resist this one. It comes from Jim Edwards, Division of Coal and Energy Technology:

'Is a negative PPE outcome called a Poo Poo Ee, and is the recipient consequently granted an excrement rather than an increment ...?' Wish I'd thought of it.

Anyhow, have a go at this next photo, taken by the same Bill Zimmerman you met at the head of this column.

Communication: how *do* we stack up?

We seem to have had consensus for some time now, publicly at least, on the question of whether communication is A GOOD THING. It is, we've decided, definitely something we should be doing lots of, both inside and outside the Organisation. When SCICOMM —CSIRO's own national conference on communication — takes off on August 13 this year, the question of how best to go about accomplishing this avowedly good thing will be whisked onto the front burner. It had better be: a paper answering just that question is to be ceremonially presented to John Stocker on the 15th, as the climax of the event.

Jenifer North, CSIRO's Manager of Corporate Communication, has just arrived back from the United States, where she took part in an international conference on professional communication skills and strategies. CoResearch thought readers might be interested in how we compare with the people widely thought to be working at the pointy end of that area of expertise — the Americans.

I have just been fortunate enough to be able to attend THE major international gathering of communication professionals, held in Washington DC. This was the 21st Annual International Conference of the International Association of Business Communicators (IABC), held June 9–12.

The IABC is an organisation of over 11,500 professional communicators working in more than 40 countries throughout the world in industry, government, non-profit organisations and academia.

My trip was paid for by its Australian equivalent — the Society of Business Communicators (SBC) — and I record my heartfelt thanks to that body for the wonderful opportunity it has given me to widen my experience.

The membership of the SBC includes marketing and public relations experts, communication managers, graphic designers and creative photographers, writers and editors, publishers and printers, and film and video makers.

The American IABC conference made most Australian conferences I have been to look very small. There were over 1,100 delegates from 24 countries, and the program was packed tight for all four days. The topics covered both strategic and technical issues, with the greatest emphasis on the strategic.

Topics I found particularly interesting were on the changes that will affect the communication profession in the next few decades; advances in developing strategic communication plans; and a large research study under way aimed at defining the characteristics of excellence in communication.

I learned far too much to pass on in a brief CoResearch article, but I'll be distilling some of it for presentation at SCICOMM 91 in August, and in articles in the SBC monthly newsletter. I'm also happy to talk to anyone who's interested.

For the purposes of this article I'll be dwelling on some comparisons I was able to make between the profession of communication in Australia and in the USA. There are some considerable surprises!

I went to the conference to learn. After all, the US of A is the centre of most advanced knowledge, and the field of communication and public relations has always been one of its strengths.

What I found was that, whilst they are often ahead of us in some technical aspects of communication, we are ahead of them in adapting more quickly to some major strategic changes affecting our profession. My impressions were gained by listening to advice from several speakers, observing audience reactions and talking to many American communicators.

For instance, in CSIRO, and in other Australian organisations I know, we seem to be further ahead in changing from using broad, mass-media messages for wide audiences to using more specific, targeted messages devised to suit varying key audiences. The Americans still tend to be bound up with mass communications.

Targeting not only improves the effectiveness of the communication but usually saves money too! Of course it demands more skill and knowledge of audience characteristics, the different communication media available and which to choose to suit each audience — but that knowledge comes with a well trained communicator.

We also seem to be further down the track in reducing the size of in-house permanent communication staff and employing more external experts on contract to provide back-up in routine technical services such as editing and graphic design. This has certainly happened with a vengeance in the Corporate Centre, and we are finding that it has advantages. It does free up the permanent staff to concentrate on longer term, more strategic issues and to put more energy into the more creative jobs.

Where we do fall behind, though, is that where this reduction of permanent staff has occurred in US companies, the senior communicators have usually been taken up into the top management teams as valued strategic advisers. In CSIRO and other Australian organisations, communicators are still too often regarded as mainly technicians. A Westpac colleague remarked on this bitterly in relation to that bank's recent PR troubles!

Another area where CSIRO, at least, falls behind, is in its lack of a coherent employee communication strategy and plan. There is heavy emphasis placed on regular employee communication in America, and almost two out of three people I met were involved in their organisation's internal communication. I listened with interest to descriptions of many organisations' innovative, vigorous and well-funded employee communication programs, and then squirmed with embarrassment when asked to describe CSIRO's.

Their programs included regular videos from the Chief Executive as well as informative videos or films on topics such as superannuation or work safety, regular meetings by the Chief Executive and other senior managers with all staff, slice group meetings, electronic mail bulletin boards, annual reports by management to employees, and telephone hotlines to provide answers to questions on burning issues.

All these activities were seen as being essential adjuncts to helping line managers in their roles. They formed part of a management-oriented, formal plan complete with objectives, strategy and budget.

However, CSIRO does seem to be well advanced in developing its external communication strategy. I met many US communicators who had developed strategies for specific external communication campaigns, but few had developed a global, organisation-wide one, except perhaps for PR, which is only one aspect of communication. So, we can pat ourselves on the back for doing both.

In summary, I found, to my surprise and pleasure, that Australian communicators were well up with advanced international trends in some aspects of the profession. Does this show that communication amongst communicators actually works?❖

SCICOMM 91

Minister for Science, Ross Free, will officially open SCICOMM 91, a three-day national conference on the role of the specialist communicator in CSIRO, in Geelong on August 13.

Dr John Stocker, Chief Executive of the Organ-isation, will take part in the final plenary session to discuss the recommendations of the conference with a view to taking them to the Executive Committee.

Four preliminary work-shop teams are already at work preparing papers on the issues voted most important in a survey of communicators earlier this year:

- resourcing communication programs;
- evaluating and recording communication programs;
- internal communication; and
- communicating through images and sound.

Other key issues for panel discussions will be the roles and relationships of the various components of the Organisation — Divisions, Institute Offices, and Corporate Centre; and the use of the Research Data Base as a communication tool.

Practical workshops will be another feature of the conference, as well as special sessions set aside for photographers and graphic designers.

A range of displays and informal learning sessions will round off the program.

Registration forms are available from any of the following:
Peter Murphy: 09 387 0710
Rae Robinson: 03 487 9217
Jenni Metcalfe: 07 377 0361
Nancy Mills Reid: 02 887 8259
Wendy Parsons: 06 276 6615

Obituary: Peter Roberts

Obituary: Peter Roberts

On May 20, 1991, Peter (E.P.S.) Roberts C.M.G., died peacefully, aged 78, at his property 'Minnel'.

Mr Roberts was a member of the CSIRO Executive in the late 1960s and 1970s, and a strong advocate of expanding CSIRO's work to help agriculture in Northern Australia.

An eminent contemporary of his, Sir Frederick White, Chairman of CSIRO from 1959 till 1970, has written this tribute to him for CoResearch readers.

Peter Roberts joined the Executive of CSIRO on 14 March 1960. Ian Clunies Ross, the Chairman, had died in 1959, followed within a relatively short time by Stewart Bastow. After this the size of the Executive was increased to nine members. Peter Roberts was one of the new part-time members and was on the Executive for more than a decade.

He had a profound knowledge of the wool industry in Queensland. He gave me great help in deciding on the research program for that State.

His special interest was in the Division of Tropical Pastures, which had just been founded. Its task was to improve the pastures of the north by introducing pasture plants, many from overseas.

I visited his property 'Minnel', a few miles west of Goondiwindi, several times. I was struck by its flatness, and saw many plants and animals that were new to me as a New Zealander.

Peter Roberts had many friends in Australia, particularly amongst the young. He will be sadly missed.

Frederick White

Arthur Frost Apprentice Award

The 1991 CSIRO Arthur Frost Apprentice Award was officially presented to Deryk Hartwick at the Division of Atmospheric Research recently by CSIRO Board Member, Dr Kevin Foley.

Mr Hartwick began his apprenticeship as a radio tradesperson at the Division in 1987. He worked in the Electronic Instrumentation Group on the development and manufacture of a range of instruments including rainwater collectors, remote pressure monitors and a volcanic ash detector.

Mr John Bennett, Project Manager, described Deryk as a 'most conscientious, diligent and persistent apprentice'.

At the presentation, Mr Roger Digby, CSIRO Apprentice Coordinator, outlined the history of the CSIRO Arthur Frost Apprentice Award.

The award commemorates the life of Arthur Frost, a workshop supervisor at the then Division of Textile Physics, now Wool Technology. Arthur took a keen interest in the development of apprentices in his Division and throughout CSIRO in Sydney. First presented in 1974, the award is now funded by the Institutes of CSIRO and comprises an inscribed plaque and a cheque for $500.

Mr Hartwick now works as a Technical Assistant at the Division of Forest Products in Clayton.❖

Professor Murray Gillin, Senior Vice President of the Institution of Engineers, Australia, will speak in Canberra on 'Engineering Australia's Future — a Primary Role for Education.'

The talk will be given in the Forrest Room, University House Cellar Bar, Australian National University, on Thursday August 22 at 5.30 p.m. Drinks will be available from the bar.

The cost is $3.00, and no booking is required. Please direct enquiries to Ross DeVere, at his home number — 06 258 2486.

Bernie Mithen leaves CSIRO

After a quarter of a century, Bernie Mithen has left CSIRO to go to work for the Australian Securities Commission as its Executive Director.

When he finished up on Friday June 14 it was as General Manager of CSIRO's Information Services Branch at 314 Albert Street, right back where he started from in 1966, when the site was still the Organisation's headquarters.

The offer of the new job, Mr Mithen told *CoResearch*, 'came along a year or two sooner than I thought it would, but it came along, and it was a bit too good to resist.'

The Commission is a body with a staff of about 1,700, sited in Melbourne. It looks after company registrations, statutory returns and processes, and the ASC business centres all around Australia.

Mr Mithen said the job would be a challenge as well as a step up. 'It will have,' he said, 'the same central focus on information as a resource that needs to be managed and husbanded in the same way as any other current resource.

'But the market for the information at the ASC is pretty extensive, and that will be a bit of a change.'

Mind you, he's used to change. Mr Mithen said some people may have their first year 25 times, but that certainly hadn't happened in his case.

Not only has he had frequent job changes himself in CSIRO: he has watched CSIRO struggle through frequent and deep changes in structure and attitude over the years.

'I think that CSIRO has changed very significantly for the better,' he said, 'given the changes in public expectations of a research organisation.

'The old days where science was what the best brains did best are gone. CSIRO has refocused, and reorganised, to meet that challenge, and it's done that very well.

'What the best brain does best is now explicity focused on national benefits and industry need.

'We're doing the same job, but we're doing it differently, doing it a little smarter and a whole lot more focused, with a more corporate approach to how CSIRO is going to add value to Australia. We are deliberately focusing our efforts rather than allowing the consequences of those efforts to emerge.

'It really began with the implementation of the new CSIRO on the first of January 1988, and it's been given an enormous kick along by John Stocker.

'We went from being a university without students to an organisation that not only knows why it's doing the research it's doing, but is able to explain that to the Australian community and to make the changes necessary to meet the demands as those demands change. We are becoming increasingly responsive.

However, Mr Mithen did admit there were some losses to set against all those gains.

'The old CSIRO,' he said, 'simply let loose to do its best on its own programs, unquestionably produced some of the best science in the world.

'But community expectations, especially of accountability, have meant that we need to have that activity focused.

'We can no longer say 'trust us' or 'look at our track record'. Now we have to demonstrate why we are doing what we are doing and why we have allocated the resources to those outcomes.'

❖

Several farewell functions were arranged for Mr Mithen before and on his final day with the Organisation.

At the climactic farewell, held, of course, at the historic East Melbourne site now housing the Information Services Branch of which he was head, Mr Mithen was presented with the 'Order of the *Paoa* [spade]' in formal recognition of his outstanding achievements in the field of tall story telling, impersonations, and the calling of a spade a spade.

That evening he and his wife were wined, dined and showered with goodonyas.

❖❖❖

The only thing that's still the same as it was 25 years ago when Bernie Mithen started his career with CSIRO at 314 Albert Street — the number. Photo by Max McMaster, Information Services.

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CoResearch

No. 343 September 1991 CSIRO's staff newspaper

CSIRO AUSTRALIA

Budget beats slap in face

Faint, but genuine, smiles and a couple of almost-hearty cheers greeted this year's Budget allocation for science at CSIRO's top table. CSIRO Chief Executive John Stocker said, 'I am pleased that science and CSIRO are being supported by the Government. However, we will have to continue to work hard to make sure there is general recognition of the importance of investment in scientific research to the future of Australia.'

Science Minister Ross Free said, 'I am pleased to report what, in the present economic climate and in the context of fiscal restraint, can only be described as a successful outcome for science and technology.'

At a nearby (— some said *very* nearby) table Shadow Minister Peter McGauran was heard to admit that CSIRO had 'won a minor reprieve' which he attributed to 'John Stocker's forceful advocacy of the cause of CSIRO within government circles and the committee networks.'

The Budget brings a 4.3 per cent real increase in government support for major science programs. The budget appropriation to CSIRO has increased in real terms by 3 per cent.

CSIRO has been granted an extra $10.72 million for urgent repair of decaying buildings and equipment. We had asked for $20 million.

Some breath had been held over the question of whether the Federal Government would make good its half-promise to meet the full costs of implementing the award restructuring CSIRO undertook last October in return for sizeable pay rises for its staff, particularly its scientists. This Budget meets that cost.

The bad news is that, unlike the ABC, we have not been let off the irritating and apparently merely silly hook of the 'efficiency dividend', the 1.25 per cent extracted from our allocation each year regardless of performance, or anything else, as an 'encouragement' to greater efficiency. (See letter below.) This year's 'dividend' amounts to $4.12 million for CSIRO, bringing our $10.72 million down to $6.6 million.

An important, though unsurprising, element of this Budget is the formal acknowledgement of the Government's promise to make three-year funding a permanent fixture for CSIRO, the Australian Institute of Marine Science and the Australian Nuclear Science and Technology Organisation.

At the 1991 National Science Forum Budget luncheon on August 21, the day after the Budget release, Science Minister Ross Free praised CSIRO's work on research priority-setting and made much of a future White Paper on science and technology that has been endorsed by the Prime Minister's Science Council.

Designed to set strategic directions to guide Government decision-making on science and technology, the paper is due to be tabled in the first half of 1992.

Shadow Science Minister Peter McGauran, who also spoke at the luncheon, expressed reservations about the White Paper.

'When I hear talk of White Papers and the like,' he said, 'I am afraid I hear the not-so-gentle footsteps of the Department of Employment, Education and Training in the background.

'Perhaps I am being melodramatic or overprotective, but I am worried that the White Paper — and the bureaucratic impetus behind its development — represent efforts to build closer administrative structures around the nation's scientific and technological research activities.

'I am concerned that the public research sector is under so much pressure to demonstrate its return on investment that it is in danger of losing its way in respect of commercial objectives.'❖

From the sidelines ...

The Treasurer, Mr John Kerin, was in Rockhampton recently on his so-called 'selling of the budget' trip, where he spoke to a luncheon of local cattle producers, business people, union leaders, academics and representatives of state and federal government bodies.

During the question time that followed he was asked the following question by a CSIRO staff member.

'Mr Treasurer, would you please explain to me and to the other members of the public here this afternoon why it is that you reduce your contribution to CSIRO every year by 1.25 per cent and call it an efficiency dividend? If we were to reduce our efficiency by just a touch would you provide us with an efficiency bonus of 1.25 per cent?'

To which the Treasurer replied —

'This doesn't just apply to CSIRO but across the board ... blah blah ... more difficult to see its merit in the particular case of CSIRO ... yawn yawn ... a good idea to keep big government bureaucracies lean and keep their eye on efficiency ... bore bore ... but I can assure you that it won't last forever.'

The latter is just as well because the asymptote of the policy is zero!

... sent to CoResearch by 'a Rockhampton CSIRO scientist'.

CSIRO takes lead in motherhood statements

(and backs them with money)

With the announcement of the opening of its third on-site child care centre CSIRO takes the lead in providing this sanity-saving service to its employees. No other government agency in Australia has provided so many work-based centres out of its own pocket.

This third centre, at the Clayton site in Melbourne, has not yet been built, but funds *are* committed, and the Chief Executive of CSIRO, Dr John Stocker, has made it all official by enthusiastically turning the first sod on the spot where the centre will go up.

Dr Stocker, a self-confessed father, denied any softening parental prejudice. The centre, he said, was a hard-headed investment decision aimed at retaining the Organisation's best people.

'No other federal government department or government business enterprise has so far been willing to build child-care centres in three states,' he bragged. 'CSIRO is leading on this issue and we are proud of it.'

'So far,' Dr Stocker said, 'science has been much too much a male domain.' He said he hoped providing child care on the work-site would give more women heart to combine careers in science, or science support, with motherhood.

CSIRO is spending $1.5 million on this program to provide child care for its staff. The two other centres are in Sydney and Canberra.

The new centre should be open for business by January 1992 and will provide high-quality — and high-accessability — care for about 40 'scientific' babies and toddlers.❖

Excalibur! Which knight has the power to pull the enchanted spade from the soil and free the women of CSIRO from the cruelty of off-site child-care?

A fair-sized cutting from the root of all evil ...

'The fundamental evil of the world arose from the fact that the good Lord did not create money enough' — Heinrich Heine, 1822.

Well, there goes another budget, and, all things considered, not too bad a one.

Of course our central concern with this last one has been capital funding. From the graph below you can see how during the early and mid eighties we had quite large slabs of money available for capital, and how those sums dwindled until they became nearly invisible at the top of last year's expenditure bar.

The CSIRO Board has agreed with me that we'll have to do something about it, and that something is to spend money on it. We've decided the essential amount for us to spend over this triennium is $35 million each year.

We can fund about $15 million of this from our own resources including the sale of various assets. We asked the Federal Government for the balance, $20 million a year for three years. In fact, the total amount in the submission was $22 million for CSIRO, AIMS and ANSTO, of which our share was about $20 million.

I feel that given the extremely difficult budget context, the fact that we got $12 million, of which $10.72 was set aside for CSIRO, was a good result.

The White Paper on science and technology that the Government is putting together for next May will give us another chance to press the case for the importance of capital funding. We must again put it forward forcefully as a major problem requiring government action in the funding of this country's science and technology.

In past *CoResearch* columns I have mentioned the issues and options paper being prepared by ASTEC on the state of Australian science, and that paper is now complete. Throughout their consultation process the ASTEC team heard the capital funding theme repeated again and again, and they have highlighted it in their recent publication 'Funding the Fabric of Australian Science.'

Another ASTEC committee is now looking at the issue of major facilities and items of equipment, and two of our senior people are serving on this committee: Jim Peacock, Chief of the Division of Plant Industry, and Ron Ekers, Director of the Australia Telescope.

In the course of discussions leading up to the budget I became convinced that the importance of CSIRO research *is* being recognised in high places, and that Project Ambassador has played an important role in this. We'll need to step up our efforts to ensure a good outcome to the May 1992 White Paper.

The blot on our landscape remains the so-called 'efficiency dividend', and we still have to mount a concerted effort to push for the realisation that this regular erosion of 1.25 per cent to our budget is most unlikely to increase the efficiency of our research. Quite the reverse, in fact.

We can perhaps take some heart from the success of the ABC in having this pernicious 'dividend' removed.

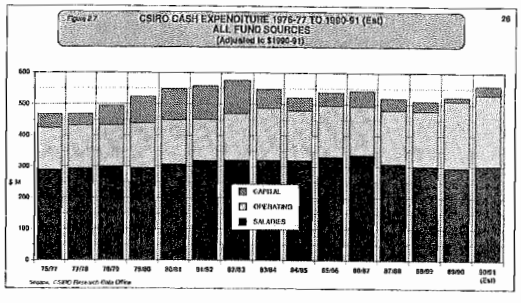
❖❖❖

And now I'd like to put in a plug for my new video.

Just the other day I was shown the final version of a short video newsletter I have been working on with Nick Pitsas, Nick Alexander and Robert Kerton at our Film and Video Centre in East Melbourne. I am pleased with the outcome and the video will now be sent out to Divisions.

I'm hoping it will be a useful vehicle for further improving our internal communications. I'm looking forward to feedback from staff as to whether you think it is an appropriate thing to do, and whether the kind of material we've chosen for the first episode is what you would like to see.

In future episodes we mean to highlight the extraordinary efforts of women and men throughout the Organisation who are making unusual or interesting contributions. Please, really, let me know what you think.



The above graph is from the 1991 CSIRO DATA BOOK

Letters to the Editor

Dear Editor,

I would like to comment on some aspects of the sale and disposal of equipment (both recent and ancient) throughout the Organisation.

I have noticed in our Division that some equipment sits around on shelves or in cupboards long after it has ceased to be useful to a project. I'll bet it is a similar situation elsewhere, and occurs because the disposal procedures within the Divisions are time-consuming and the monetary returns from many of the items of auctioned equipment barely cover the procedural costs of disposal. In contrast to highly saleable items such as motor vehicles, power tools and the like, much of the specialised equipment has a very limited market outside the Organisation.

To make better use of these equipment resources before they reach disposal status why not try an equipment exchange column (for sale, swap or donation) in *CoResearch*? Equipment lists circulate through various Divisions from time to time, and some, I understand, are also on electronic mailing facilities. However, there is no universal list available to all Divisions simultaneously.

People whose programs are in priority-funded areas may not see the merits of this idea, but there are many of us who are not so fortunate, who have to make do with equipment that is not state-of-the-art, who need equipment for a project but don't have the necessary funds. Naturally, any transaction with equipment would have to follow conventional rules and guidelines as laid down by the Organisation.

When the question of disposal arises, what is really stopping us from setting up small in-house tendering procedures to encourage staff to help recycle a small portion of those otherwise-lost funds on antiquated museum pieces?

To start the ball rolling, the Bushfire Research Unit, Division of Forestry, Canberra, has a Sartorius Infra-red Dryer for sale.

The instrument package consists of:

1. a thermo-control assembly, model No. YTC01L
2. a balance, model No. B310S, capacity 310g, readability 0.00g
3. a data printer model No. YDP 02–OD.

It is all housed in a purpose-built alloy carry-case suitable for field use. The equipment was purchased about eighteeen months ago for $4,400.00 and has only been used on one field excursion.

For more details please contact Peter Hutchings: phone 06 281 8341 or fax 06 281 8348.

Peter Hutchings
Senior Technical Officer
Bushfire Research Unit

Mr Hutchings suggests the name 'Siroequip Trader' for a possible regular CoResearch column. I like the idea very much, but I'm totally dependent on readers for items to advertise in it. Please, everyone, let me know if you would like to see such a column, especially if you have an item or two I could kick off with.—Ed.

Dear Editor,

Following the birth of my second son, I have reassessed my priorities and have resigned from the Organisation. Since commencing in 1977 I was fortunate to work in all areas of CSIRO administration — RAO, Head Office, Division and Institute, and was privileged to see much of the research of the Organisation first-hand, through visits to many sites across Australia.

I would like to take the opportunity, through *CoResearch*, to thank all CSIRO staff with whom I came into contact over the years for their friendship and support. I wish everone, and CSIRO, all the best for the future.

Cathy Read
Institute of Information Science and Engineering
North Ryde

Dear Readers,

People send me stories, they give me tips, and they answer my questions when I call them up. But they never send me any cartoons! I *know* we have artists out there. How about a few original cartoons for your very own staff newspaper?

Liz MacKay
Editor, CoResearch

More letters on page 6

SCICOMM 91

Friday the 13th fell on a Tuesday last month. Dozens of the 150 or so CSIRO communicators who attended SCICOMM 91 on August 13, 14 and 15 were struck down by a mystery gastric affliction blamed variously on the Geelong water supply, the airline orange juice, the more lively of the midnight workshops and the less lively of the conference presentations.

In spite of the fact that many of those stricken were prime organisers of the conference — Lindsay Bevege, Judy Marcure and Wendy Parsons, for example (did I mention poisoning as one of the suspected causes?) — the affair was generally agreed to have been a success. Much heat was generated in the workshops, and even some consensus. The results of the workshops, after being presented to, and reshaped by, a gathering of all conference members, were sent to John Stocker for his response. The conference was to have been ceremonially opened by Minister Ross Free, which it was, and ceremonially closed, with the passing over of the conference recommenations, by Dr John Stocker, the Chief Executive. However, Dr Stocker was also laid low by illness. He sent this message, shown above being delivered to Wendy Parsons by his proxy. (John Card of Wool Technology took the pictures.)

TODAY'S NEWS OF DIRE CONSEQUENCE TRICKY
HAS HIT HOME LIKE A BLOW FROM A BRICKIE
A STRIKE BY AN ICON
TO PSYCHE 'EM AT SCICOMM
— THE CE IS TAKING A SICKIE!

PRIORITIES QUESTIONNAIRE ALERT

Last month *CoResearch* promised to tell you about a questionnaire being prepared by CSIRO's Consultative Council and the Communication Working Group. The questionnaire is aimed at finding out what our scientists feel could be done to make the whole process work better, and it will be sent out this month to all project and program leaders.

John Stephens, better known as vice-president of the CSIRO Officers' Association, is the convenor of the Consultative Council's working party on the research priorities exercise. He told *CoResearch* 'a vigorous bottom-up response to this exercise is essential. Otherwise, in a changing world, we may well fail to preserve the science in CSIRO's research and development mission.

'This questionnaire,' he said, 'is a step in the development of that bottom-up response.'

The scientists will be asked how they think the priority-setting initiative has affected CSIRO's image, both inside and outside the Organisation. They will also be asked for specifics on how it has affected their staff, how valid they think the methodology used to set the new priorities actually is, and how good or bad the communication of the process has been.

Finally they will be asked for overall comments and specific suggestions as to how the process might be improved.

The clover country

The media success of CSIRO's recent 'Clever Clover' campaign has been immense. The papers have loved it, the telly has loved it, and the people who read papers or watch telly have loved it.

Clever Cover, if you haven't already got it by heart from the various news reports, is a way of managing the vegetable garden to minimise soil degradation. During the winter, clover is grown in the beds that will carry summer vegetables, and during the summer, lucerne goes into the beds that will carry winter vegetables. These off-season crops offer a source of mulching material, as well as protecting the soil from excesses of sun and wind, adding nitrogen to the soil and encouraging worm activity.

Toss Gascoigne of the CSIRO Centre for Environmental Mechanics, who thought up the name and handled much of the publicity campaign, offers CoResearch readers this brief report on its success, from our point of view ...

The CSIRO lives as an admired and much-loved Australian institution! That's the clear message from the letters that have been flooding in to the Centre for Environmental Mechanics with orders for 'Clever Clover' kits.

Many of the 1,900 letters that arrived in the first week contained warm words about CSIRO. 'Congratulations!' began one; and another, 'I think you are doing a wonderful job for Australia. Keep it up — the country needs you!'

The computer system handling receipts for this bundle of mail has been thrown into confusion by cheques made out for $15 instead of the $10 the kit costs. 'Keep the rest,' reads a typical accompanying letter, 'it's a small donation to help Australia become a slightly cleverer country.'

What started out as a message about soil degradation for the Australian public has taught the people at the Centre for Environmental Mechanics a thing or two as well. They learned that media work takes time, that twenty-plus radio interviews and a handful of television appearances will soak up the best part of a research week for two scientists. In this case, the two whose time got sponged were the Centre's Dr Richard Stirzaker and Dr Ian White.

While the media have done a great job of spreading the message, sometimes it has got a bit blurred. 'Clever Clover' was not designed to be the answer to every young maiden's prayers — it needs both intelligent gardening and a larger-than-average vegetable patch. The message has at times been over-simplified in a way scientists find dismaying.

But the main aims have been achieved. The Australian population knows a little more about soil degradation; scientific research will get welcome feedback from the experiences of thousands of users; and the country has had a timely reminder about the pivotal role CSIRO plays in research.

All up, a 95 per cent success.❖

Above, Dr Richard Stirzaker of the CSIRO's Centre for Environmental Mechanics exults in the plenty that Clever Clover has brought to his backyard vegetable garden in Canberra. Photo by Greg Heath, also of the Centre for Environmental Mechanics.

— APOLOGY —

The July issue of CoResearch (No. 342) gave a list of all the CSIRO projects that had been successful in attracting extra funds from the new pool of money raised by the 1.5 per cent annual levy. The article appeared on pages 4 and 5 and was titled 'Priority projects for this year'. At the end of the description of each project I ran a list of the Divisions involved.

There were two omissions, for which I apologise:

- ***the Division of Mineral and Process Engineering should have appeared in the list under the 'Waste treatment' project heading;***
- ***the Division of Forestry should have appeared in the list under the 'Matching land use to forestry practices' heading.***

Judith Koch retires after 40 years

Vale Ron Garvie

Dr Judith Koch, Assistant Chief and Officer-in-Charge of the North Ryde site of CSIRO's Division of Biomolecular Engineering, has retired after 40 years with the Organisation.

Dr Koch has become known in CSIRO, and beyond it, as a vigorous advocate of decent working conditions for women.

She grew up in Hungary and completed her medical qualifications in Munich before coming to Australia.

Her work for women —

She joined the Division of Animal Health in 1951, just as people were starting to take an interest in the role of women in CSIRO. In 1949 women had been admitted to permanent employment in the Third Division (professional and higher clerical and technical grades). Reforms in the '50s and '60s included permanency for married women and equal pay for equal work.

In 1973 the Australian Government ratified an International Labour Organization convention abolishing unfair discrimination in employment and education. But in 1975 — International Women's Year — there was still evidence of unfair discrimination in promotion and of a backlash over maternity leave and work-based child care.

Judith Koch belonged to a small band of CSIRO women who were concerned about the chances they and other women had of getting full professional status and career opportunities in the Organisation. They approached Grattan Wilson, then Secretary of CSIRO, and asked him to set up a committee to investigate the role of women in the Organisation.

He formed a committee made up of Judith Koch, Marjorie Jago, Don Gwynne and Arthur Blewitt; but the Officers' Association, not trusting this arrangement, set up its own committee.

In 1978 the two committees came together under the Consultative Council Sub-committee on the Employment of Women, with Judith Koch as Chairman (her own preferred title). All of CSIRO's staff associations were represented on the sub-committee.

The group developed a questionnaire which was completed by all the women in the Organisation, and by a comparative sample of about 800 men.

They prepared a report which was considered by a special meeting of the Consultative Council in 1983. In February 1984 the CSIRO Executive endorsed all 49 of their recommendations, thus laying the foundations for our current Equal Employment Opportunity policies.

Above, Dr Judith Koch, noted for her work on behalf of women in CSIRO as well as for her scientific excellence.

Judith Koch's role was central to this success, and it was not simply a case of 'follow the leader', with the greater public service making the running. CSIRO was the first Commonwealth employer to adopt a formal policy on the employment of women and to undertake such an extensive study of the women in its employ. (We are currently leading the field in the provision of on-site child care, too: see story page 1.)

and her work for science —

Judith Koch first joined CSIRO as an enzymologist with the Division of Animal Health. Later she went to the Division of Animal Genetics to work on tissue growth factors, moved to the North Ryde site with the Division in 1966, and has remained with it through five name changes and four Chiefs.

Her work from the late 1960s onwards was concerned with epidermal growth factor (EGF), now well known as a chemical de-fleecing agent for sheep.

Samples of EGF extracted and purified in her lab were the first supplies to be tested in the de-fleecing program. They became the standard in attempts by CSIRO staff working at the Carlsberg Laboratories in Copenhagen to synthesise bulk EGF.

In her own work, Dr Koch carried out extensive studies on the functional and structural relationships between EGF and its variants. She reported a previously unrecognised immuno-suppressive property of EGF. Unlike many of its other properties, this was dependent on the molecule's being structurally intact.

In 1970 she was promoted to the rank of Senior Principal Research Scientist in recognition of her research achievements.

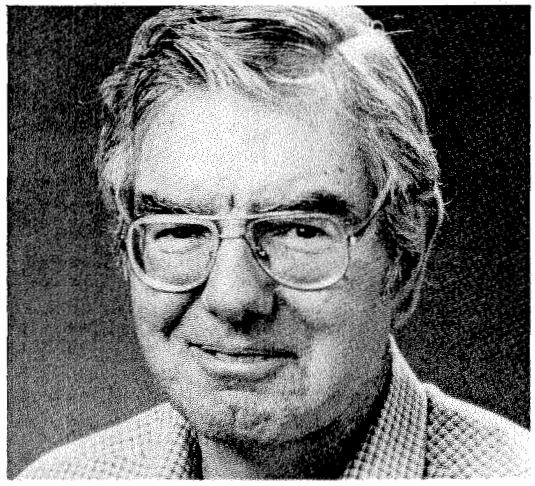
In 1984 she was made Assistant Chief of the newly formed Division of Molecular Biology.

Recently Dr Koch has become strongly involved in the issues associated with occupational health and safety and with the ethics of scientific work with animals.

She has also recently played an important role in the management of the Division of Molecular Biology and the (short-lived) Division of Biotechnology, serving several times as Acting Chief.❖

Vale Ron Garvie

The following tribute to the late Ron Garvie was contributed by M. J. Bannister, Senior Principal Research Scientist and Ceramics Program Manager at the Division of Materials Science and Technology, on behalf of his Division.



Ronald Charles Garvie, a Chief Research Scientist in the Division of Materials Science and Technology at Clayton, died of cancer on the evening of Tuesday August 6th, 1991. He was 61, and is survived by his wife Gudrun, daughter Vivian, son Cy and son-in-law Jaime. His passing was marked with great sorrow by his friends and colleagues in CSIRO and around the world.

Ron joined the Engineering Ceramics and Refractories Laboratory of the Division of Tribophysics (as it was then) early in 1972.

He was born and educated in Canada, and had previously worked with Atomic Energy of Canada Ltd, the Canadian Department of Mines and Technical Surveys, the United States Bureau of Mines, Corning Glass Works and McMaster University.

He was recruited to CSIRO by the late Neil McKinnon to boost the Division's new research program on zirconia ceramics. His efforts and those of his co-workers were quickly rewarded with spectacular success — the discovery of transformation toughening in partially stabilised zirconia ceramics.

His seminal Nature paper 'Ceramic Steel?' published in 1975 (with co-authors Richard Hannink and the late Terry Pascoe) marked one of the most significant achievements yet made in the science and technology of engineering ceramics, and was a major turning point in the strengthening and toughening of ceramics. It led directly to the present Nilcra PSZ advanced ceramic manufacturing operation and indirectly to the local production of zirconia powders by Z-Tech, both activities now forming part of ICI Advanced Ceramics. It also put Australian advanced ceramic research on the international map in a way never before achieved. For their development of PSZ ceramics, Ron Garvie, Richard Hannink and Terry Pascoe were awarded the Victorian Branch Ceramic Achievement Award in 1984.

The development of PSZ sparked a series of international conferences on the Science and Technology of Zirconia, beginning in 1980. Ron was on the Organising Committee for the first three, and his pivotal role in modern zirconia ceramic technology was well recognised by his appointment as Chairman of Zirconia V, the fifth International Conference on the Science and Technology of Zirconia, to be held in Melbourne in August 1992. Sadly, he will not be here to receive the plaudits that are sure to come.

Through the 1970s and '80s Ron continued his love affair with zirconia, devoting himself to studies on the thermodynamics and mechanism of the tetragonal/monoclinic phase change that is at the heart of transformation toughening and, in more recent years, to exploring novel ideas for using zirconia to improve the mechanical properties of refractory bodies. Despite surgery earlier this year he continued an active involvement with his research team, maintaining contact by fax when enventually he became too weak to travel to work. He continued communicating to within days of his death.

Ron was a stimulating and enjoyable companion with a vigorous and inquiring mind. He delighted in challenge and competition. He had a great love for CSIRO and often credited the Organisation with providing the right blend of scientific and industrial stimulation for his work. He will be greatly missed.

Planet panic

By David Mussared, CSIRO Public Affairs Unit

Staff at the Australia Telescope's Sydney site witnessed a media feeding frenzy last month when the news broke in England that an Australian and two other astronomers had discovered the first-ever planet outside our solar system.

One of the astronomers, 28-year-old Australian Matthew Bailes, was visiting the CSIRO site when the news broke as a cover story in Nature. Dr Bailes, funded by an Australian Academy of Science scholarship, had been working with the two English scientists at Jodrell Bank in the UK when the team made the discovery.

News of the find was released to the media, but was embargoed until the official publication time for *Nature* at 9am (Australian time) on Thursday, July 25. That embargo was broken by two London papers on Wednesday afternoon Australian time.

So on Wednesday night the Australian press pounced. Journalists from news organisations around Australia began ringing CSIRO's Dr Dick Manchester, who was working with Dr Bailes at the Australia Telescope.

The journalists also rang anyone and everyone else they could think of. Barry Parsons, the site engineer for the Australia Telescope and the Division of Radiophysics, was getting frantic calls on his emergency after hours number till after midnight.

The next morning the Communications Office at the Australia Telescope became the headquarters for a national media scramble.

A Channel 7 crew was waiting for Dr Bailes as he shut the front door behind him to go to what he supposed would be a quiet day of pulsar discussions with Dr Manchester. It was to be the first of many such encounters.

Dr Bailes spent the next eight hours doing radio interviews, television interviews and newspaper interviews and posing, patiently, for interminable photographs. For a man suffering from jet-lag and bemusement he coped remarkably well.

There were some light moments. A constant demand from the media was for scale diagrams — pictures they could use in the newspapers. The explanation that a scale diagram such as was being requested would probably in itself be many times larger than the continent of Australia fell on deaf or uncomprehending ears. After all, 30,000 light years is a very long way, especially if you want to get a decent-sized Earth, and Australia, into the picture as well.

About 4.30 in the afternoon the media people vanished as suddenly as they had arrived. Back in their offices other stories beckoned.

And when you weigh up the relative news merits of a new planet against whaever the Prime Minister said in Parliament that day — well, they hardly compare, do they?

By five o'clock the new planet had plopped quietly back into the obscurity it had enjoyed for the past several billion years.❖

Above, Dr Matthew Bailes, one of the discoverers of the new planet.

Priorities? What priorities?

Well, some of you may be groaning at the sight of yet another article on research priorities, but there are a lot of staff still saying they don't fully understand the process or its effects. That can't be good, since the process is going to affect, and involve, all of us more and more as time goes on. Andrew Pik, who chairs the Institute Policy and Planners Group, offers CoResearch readers some answers to the seven 'most popular' questions.

In April 1990 John Stocker called on the Institute Planners to help him develop a methodology and process for determining national research priorities.

Since that time we six Institute Planners, with the help of the Corporate Planning Office staff, have spent countless hours in preparation and debate to help the Chief Executive achieve his objectives.

The methodology, the process and the budgetary implemenation are now in place, although fine tuning, particularly of the levy re-allocations scheme, is still going on.

The debates have been exhaustive. The more the process is discussed the more questions are raised. Some of the more common ones we have been fielding are set out below together with a John-Stocker-approved response.

If there is sufficient interest we'll be happy to prepare another set of answers, this time to questions from *CoResearch* readers. Over to you.

What exactly is the priorities process?

It is part of the strategic and operational planning process and involves three distinct phases:

- assessing national research priorities (by analysing and scoring each research purpose against the four criteria — potential benefit, ability to capture that benefit for Australia, research and development potential, research and development capacity);
- working out what CSIRO's response to those priorities should be (since we are not the only research and development performer, and since we need to decide what the balance should be between appropriation and external funding for each of our research purposes);
- implementing the CSIRO responses (this will be done by Divisions and Institutes, in line with the decisions made by the Executive Committee on what that response should be and the Chief Executive's re-allocation of the 1.5 per cent priority levy).

How often are priorities set?

Once every three years at the broad level. Thus this year's basic re-allocation will be repeated for each of the next two years. The next major review of organisational priorities is scheduled for April 1993 to take effect from July 1 1994 (— the start of the next triennium).

How much is being re-allocated each year?

The 1.5 per cent levy yields about $4.5 to $5 million each year in this triennium. About one third of that goes to strategic minerals, one third to environmental aspects of economic development and one third to other areas.

Are the allocations for three years?

No. The allocations are recurrent. This means they become part of the Division's recurrent budget and are subject to the 1.5 per cent levy each year.

Will the levy system operate forever?

Not necessarily, and it may not stay at 1.5 per cent. There has always been a need to adapt to changing priorities, and there always will be, but there may come a time when we can do this within Institute and Division budgets.

When the Board thinks that time has come the levy will disappear, but Divisions and Institutes would still keep up their own internal mechanisms to make sure resources went to the highest priorities.

Why do we have to have all this extra workload to prepare bids?

In the first round the bidding process probably did result in a lot of extra effort. It did, however, focus a lot of healthy discussion on the identification of important priority areas of CSIRO research. Hopefully we can continue to refine the process. What we are after is a system in which Institutes and Divisions bid for money only in those areas of research they would want to pursue anyway, regardless of the levy arrangement. Then the central bidding process would not be extra work but a natural outcome of the Division and Institute strategic planning processes.

Who makes the priority decisions?

The Board, on the advice of the Chief Executive and Directors, makes the initial decisions at the broad sectoral level of the research purpose classification scheme.

Then, at the next level down, the Directors and Chiefs determine priorities within their areas of interest.

In the same way, but at a lower level again, the Chiefs and program leaders together determine priorities in their area of interest.

This tiered structure allows for interchange of ideas at each level, and should lead to a high degree of interaction from bench level right up to the Chief Executive. The main forums for that interchange of ideas are the Divisional management meetings, the Institute Committee and Executive Committee meetings, and the annual program reviews and assessments made by Chiefs and Directors.❖

Letters to the Editor

continued from page 2

Dear Editor,
So you believe it is safe for you to be indifferent to the Forestry redundancies?

Our Management Committee recently had to produce a list of twenty potentially redundant staff for our Director, Ted Henzell. Several were PhD scientists; several were workaholics; several were old; several were 'not productive'; several were scientists who believe they were deliberately put in a backwater so they would qualify for the redundancy list; several were people who have more difficulty resisting the seven deadly sins than do the members of our Management Committee. (Except jealousy.) (In Australia you can say almost anything, unless, of course, it happens to be true.) In which category would your readers place themselves?

Four research articles on the growing problem of 'workaholism' in the USA have appeared in the past two years. Their general consensus: 'there is only one difference between a workaholic and an alcoholic. One works himself to death and the other drinks himself to death.' They described three major emotional problems of childhood that cause this social disease. (Female workaholics are rare.)

In CSIRO a workaholic is rewarded and promoted while someone who goes home at five is a deviant.

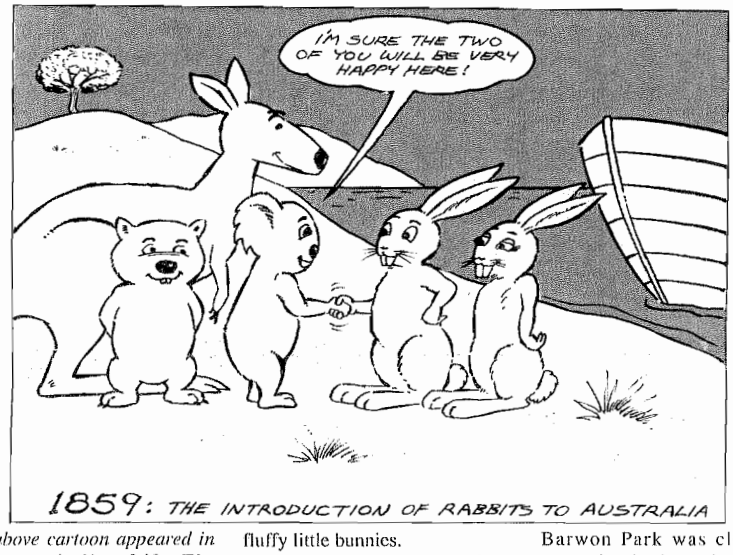
Workaholics and alcoholics will always deny their condition, but we have had enough reports, over the years, from 'a friend of the wife' to know the truth. 'Most workaholics have estranged wives.'

Our Minister, Ross Free, told me that he 'understands that the Division has explored opportunities for redeployment of those staff deemed to be potentially redundant.' At my interview I was told there was no chance of redeployment. I sent him a list of the more than twenty-five people given indefinite appointment, transferred to Forestry or appointed from outside the Division during the past six years.

My ten-year-old son has seen a photo of our Management Committee and he understands why there will be no money for a tertiary education.

If management can select the people they want to get rid of then this will set a precedent for many CSIRO Divisions.

Mike Cashmore
Division of Forestry
Canberra



The above cartoon appeared in CoResearch No. 341. The cartoon was OK, but it seems I gave the artist the wrong date. (See below.) Sorry. —Ed.

Dear Editor,
The first rabbits to arrive in Australia didn't hop ashore in 1859. In fact, five of the little buggers were collected at Cape Town by the First Fleet. History does not record what happened to them: it's likely, given the disastrous first couple of years of European settlement at Sydney Cove, that they were eaten by starving convicts — though many convicts had been sentenced to transportation for rabbit-poaching — or their near-starving guards.

HMS *Gorgon* carried an unspecified number of rabbits to Sydney in 1791, and by 1806 that choleric cleric Dr Samuel Marsden had established a warren at his Parramatta home. True to form, he was soon threatening legal action against George Caley, the botanist, following reports that Caley's dog had been frightening his fluffy little bunnies.

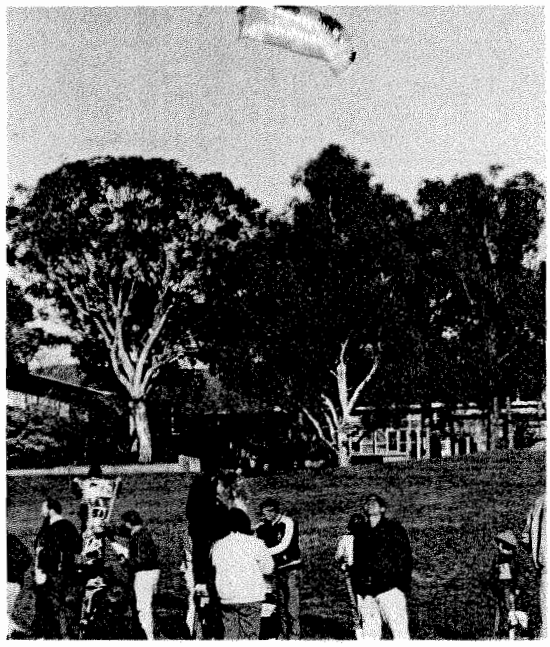
By 1837, rabbits were being kept in backyard hutches around Sydney; Hobart's *Colonial Times and Advertiser* reported in May that year that rabbits were 'so numerous throughout the colony that they are running about on some large estates by the thousands', and a colony was undermining the foundations of the Port Phillip police station in 1846.

If anyone deserves to be the scapegoat for Australia's rabbit problem it is surely Thomas Austin, an early fan of the cultural cringe who wanted to suck up to 'real' gentlemen (i.e. those from 'Home') by providing genuine British sport. Austin imported 24 English rabbits and began breeding them at his Victorian property, Barwon Park, in 1860; the ship carrying the rabbits dropped anchor on Christmas Day 1859. Austin later recorded that he and fellow sportsmen (including Prince Alfred, Duke of Edinburgh) had shot 14,253 rabbits on his property in 1867 alone.

Barwon Park was close to present-day Geelong: depending on your sense of irony, it's either appropriate that AAHL is testing new methods of eradicating rabbits so close to the site of their first major impact ... or appropriate that a rabbit plague should have been replaced by an equally pestilential plague of CSIRO communicators at SCICOMM '91.

Carson Creagh
Ecos

Caption competition



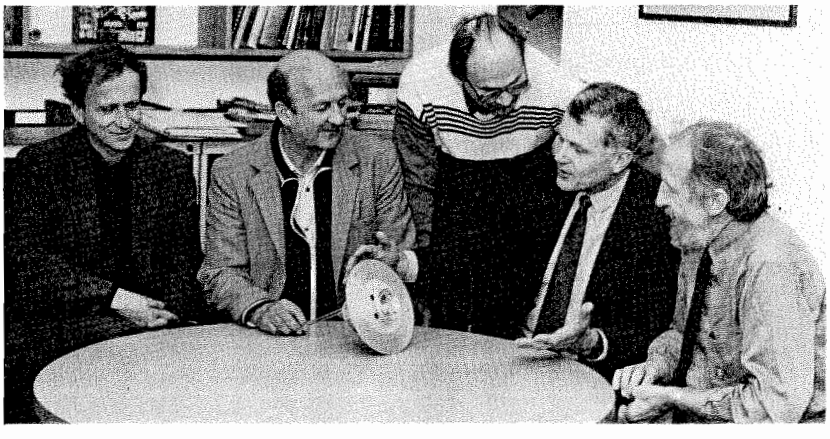
Again, lots and lots of humorous contributions from out there, but first, an apology. Owing to a typing error on my part, last month's Caption competition feature failed to give credit to one of the contributors — Colin J. Veitch of the Division of Wool Technology in Belmont, Victoria. His entry (remember, it was for the picture of Barry Jones and others viewing the 'steam' billowing up from a supercool conductor demonstration) was 'Hubble, bubble, toil and trouble, / Fire burn and cauldron bubble, / Now, who brought the bat's wings?' Sorry Colin.

The winning entry for the above photograph is 'Research heating in condominiums, not condoms!' from Karl Armstrong, Technical Information Officer for Library Services at the Division of Building, Construction and Engineering at Highett in Victoria.

Condoms were by far the most popular theme, with 'OK, I don't mind the Chief advocating safe sex ... but why does he have to brag!' from Albert Trajstman of the IAPP Biometrics Unit in Parkville Victoria; 'Graf Zeppelin now makes condoms for the Big Country' from Heikki Mamers, Division of Forest Products, Clayton; 'Yes, Minister. And if the fruit fly continues to wear this condom, Entomology guarantees us that the fly population will decrease by 90 per cent by 1995' from Warrick Dawes, Division of Water Resources, Canberra. The wildest of the condom competitors was 'CSIRO scientists test their latest invention — an inflatable condom for flying elephants. A dumb Dumbo idea?' from Stewart Walker, who claims to work with the 'Pachyderm Prophylactic Production Project' at the Division of Coal and Energy Technology.

Jenny Meyrick, from the Division of Building, Construction and Engineering, took a swipe at Canberra with 'Roll up, step this way! Get your free copy of Canberra's economic policies ... hold on tight though — remember the hot air content!'

And Lynn Pulford, of Science and Careers Education in Canberra, came through with her usual odd slant on things, offering 'CSIRO Double Helix members work on experiments to contain greenhouse gases.' Now see how you go with this one!



CSIRO to try out TQM

Total Quality Management — or TQM to its friends —has been kicking around for quite a few years, and apparently getting some good results. It's finally beginning to gain acceptance in the conservative Australian business community, and — with the public sector paying more and more attention to how business runs its business — even in government agencies. CSIRO's Executive Committee has agreed to a number of pilot projects to test the usefulness of TQM within the Organisation, and they're starting up this month. Dr Ron Sandland, Chief of the Division of Mathematics and Statistics, offers CoResearch readers this run-down of how the system works.

Any Australian enterprise that wants to compete in product export industries — or in industries aiming to provide a product we formerly had to import — must achieve quality in that product. The ability to achieve ever-higher levels of quality is one of the cornerstones on which the Japanese post-war economic miracle was built. Incidentally, quality needn't mean attaining standards of perfection that few customers would ever be able to afford, like a Rolls Royce, for example; achieving quality in the production of goods and services means reliably and efficiently meeting the customers' needs.

TQM is a 'philosophy', or system of management, with four central strands:

•customer focus — understanding who the customer is and what his or her needs might be;

•an emphasis on process rather than product — not just correcting mistakes when they happen but making sure the process delivering the products doesn't make mistakes;

•teamwork — recognising that it is everyone's job to achieve quality outcomes;

•a scientific (data-based) approach — knowing what to measure and how to use the data to help in decision-making.

Typical benefits of TQM include reduction in errors and thus in the need for 'rework', higher productivity, greater control over processes and a happier, more committed work force.

Benefits of the system in CSIRO might include a reduction in unnecessary paperflow, less time being spent by science managers on administrative tasks, fewer processing errors, a team culture in which all staff felt they were taking part, and a better understanding and integration of the roles of the different functional groups. In short, using our resources more effectively.

Doing better science is not a TQM target,2 but creating the right supporting environment can help to make sure the Organisation is not holding science back with the internal systems its scientists have to cope with.

One of the questions often asked about TQM is 'isn't it all just for manufacturing?'

The answer is definitely 'no'.

Many service organisations have benefited from TQM, and manufacturers have used TQM ideas in their service areas. Some that have benefited greatly are AVCO Financial Services, IBM, RAAF and CIG.

There are few R & D organisations comparable to CSIRO anywhere in the world, but locally Kodak has been successfully using TQM principles in its R & D group and in the United States there is considerable interest on the part of companies like Dupont, 3M, Ford and many others.

The exercise agreed to by the Executive Committee consists of four pilot projects, aimed at finding the best chance of tangible benefits to the Organisation.

Each pilot project team will be given training in the tools and principles of TQM. 'Facilitators' will help with the use of TQM tools and the building of team spirit.

In the end it will be the teams themselves that will analyse the selected processes and chart the course towards better processes. The trainers and facilitators will be external consultants and scientists from the Division of Mathematics and Statistics who have considerable experience in applying knowledge of TQM to the solution of real problems.

A working party funded from Corporate and Institute budgets is responsible for the exercise. It comprises Bob Frater (Chair), Peter Bosci (IMEC), Ian Dick (representing CSIRO unions), Ian Farrar (Corporate Centre), Tim Mangan (Division of Fisheries) and Ron Sandland (Division of Mathematics and Statistics).

Once the pilot projects have been completed, their stories will be circulated. TQM is a live process, involving real people, and we hope that the successes of the pilot projects will help us to push the use of TQM principles more widely into the Organisation.

We are not setting out to solve the problem of world hunger in two weeks. The projects are manageable and we hope they will bring benefits to the whole Organisation.

Not all groups in CSIRO can be represented in the initial exercise: we simply don't have the resources to take on more than four pilot projects right now, but we would like to see the ability to use the tools of TQM spread widely throughout Organisation.

I have spoken to most of the Chiefs about TQM and will be continuing to speak about it whenever I get a chance.

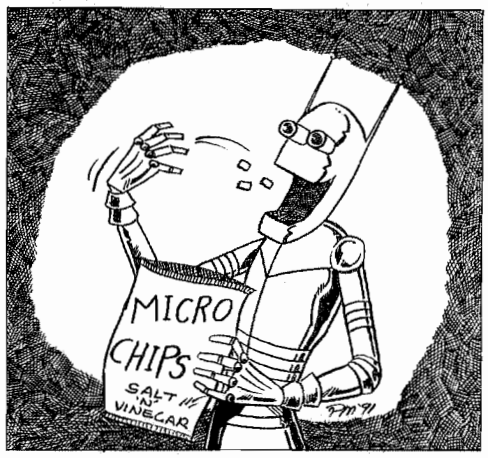
Until you get a chance to take part in training, or to be a member of a quality-improvement team, you can find out more about TQM from Doug Shaw on 02 413 7721.❖

The Clayton site of the Division of Mineral and Process Engineering has come of age. As part of its 21st birthday celebrations Professor Clive Pratt returned to give a talk about the early days. Professor Pratt was Chief of the Division of Chemical Engineering, as it was then called, when it moved from Fishermans Bend to its present site in Clayton. Above, left, he presents Dr Rob La Nauze, the current Chief, with an aerial shot of the Division of Chemical Engineering as it was then. The site now accommodates 140 staff and the Division has become a major centre for mineral and energy research.

— APOLOGY —

In the June issue of *CoResearch*, No. 341, there was an article on page 7 with the heading 'Colditz wins Ian Clunies Ross Medal.' Owing to some rather hasty research on my part the article gave the impression that the award was made for work on fleece rot and fly strike among sheep in Australia.

This was incorrect. In fact the award was given in recognition of his 'studies on staphylococcal mastitis, the use of a live vaccine to enhance the inflammatory response of the udder and in defining the mechanisms of desensitisation of inflammatory lesions of the skin [in ewes].'



New computer system for Chiefs

The MIS Branch has developed a computer system to help the ever-increasing number of research managers responsible for the management of financial and personnel resources.

The new system is called CHIEF, and was specifically designed for staff who are not familiar with the wide range of administrative computing tasks.

CHIEF provides online information for each Divisional project or program. This information is obtained from the research, finance, personnel and assets databases. Each screen has been designed with the target audience in mind, and 'help' screens and pop-up windows will help you choose and understand the options that appear on your screen.

You can access CHIEF from IBM, NGen, UNIX and MAC workstations.

CHIEF provides you with financial information as recent as the close of business on the previous day. There is no need to leave your office or bench, as you can bring to your own screen the value of grants received for your program or project, the amount spent, the details of how it was spent, and the appropriation and grant budgets for your program or project. A one-screen income and expenditure statement is also available.

There are already a good many Divisional Chiefs and program and project leaders making use of CHIEF, and if you would like to use it too you should contact your Divisional administrative staff. A comprehensive user manual is available, and the MIS Branch will provide group and/or individual training for new users.❖

Dr Barry Inglis of the Division of Applied Physics tries out the new system on his Applied Electricity and Magnetism Program

Black day for some at Black Mountain

The Black Mountain Cup has left Canberra for the first time since it came into being 15 years ago, carried off by a victorious four-man team from CSIRO's Lucas Heights site. The team runners (see photo below, by Greg Heath) were, left to right, Craig Curtis, Gary Foulds, Stuart Day and David Abernathy. They scored a comfortable win with a total time of 1 hour, 27 minutes, 53.2 seconds, more than 5 minutes ahead of the Division of Forestry.

Mick Crowe of Forestry was the first runner home, for the second year in a row, with a time of 20 minutes, 49 seconds (0.4 of a second outside his 1990 time). He described the win as one of his hardest. 'A couple of hills at the back were real killers, and the section around the saddle was really tough.' Above, the moment of victory is caught by Greg Heath of the Centre for Environmental Mechanics.

As well as being first outright, he was the first CSIRO runner home and the first in the '40 years plus' category. He carried off the bulk of the prizes, provided, as usual, by Sirocredit.

Later this year Sirocredit will also be helping Mr Crowe to compete in the Hawaiian Iron Man triathlon. He is the third-ranked Australian representative in his age group in this gruelling event, which covers a 3.8 kilometre swim, a bike ride of 180 kilometres, and a run of 42 kilometres.

The first woman home was Beverly Molloy of the Division of Water Resources with a time of 25 minutes, 32.8 seconds.

Neville Dickson of the Division of Building, Construction and Engineering took out the 'fifty plus' section in 23 minutes, 35.2 seconds.

The Centre for Environmental Mechanics kicked off the fun run 15 years ago and have been organising it ever since. Greg Heath of the Centre acts as starter and chief steward, and he reported a good turnout. A hundred runners started the 5.6 kilometre course up the side of the mountain, round one of the companion peaks, and then back to the finish line on the lawns outside Environmental Mechanics.

Only ninety-nine finished the course. Col Mason, a Sydney entrant from Building, Construction and Engineering, fell and broke his leg on one of the steeper downslopes.

Luckily, there was a doctor handy. Chief Executive John Stocker stopped to render first aid, and finished the course in 32 minutes, 19.3 seconds. Considerable doubts surround his claim that this emergency stop lasted for 10 minutes, and that an unimpeded run would have placed him 13th.

Mr Mason was in no condition to put a stopwatch on the Stocker assistance. The mystery may not be resolved until next year's run, and keen students of form will be interested to see how long it really takes the Chief to gallop round the course. (But he did gallop round it: our information is that he is the first head of CSIRO ever to do so.)

❖❖❖

Freney made Fellow of ASA

Dr J.R. Freney of the Division of Plant Industry has been elected a Fellow of the highly regarded American Society of Agronomy.

The Fellowship is in recognition of his innovative work on the chemical nature of sulphur and nitrogen in soils. The Society also drew attention to his work over the last 15 years on improving the efficiency of nitrogen fertilisers.

The American Society of Agronomy is an international organisation with more than 12,000 members. The new Fellowship will give Dr Freney entry to an élite group that includes only three other Australians.

Dr Freney will be flown to the United States in October this year to accept the award in a special ceremony.

Dr John Freney demonstrates his award-winning style as he measures ammonia loss from a freshly fertilised field. Photograph by Garry Brown, Division of Plant Industry.

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a difficult one, because the Government has required CSIRO to find 30 per cent of its funding from external earnings.

Now, in doing that CSIRO has worked very hard to meet the needs of external funders and in many cases has formed excellent working relationships with them.

But it's a competitive environment. The universities are also involved in that kind of exercise, and the rural research funds, some of them, are going through periods of difficulty, and in some cases maybe can't or won't come to the party as much as people would like.

CSIRO's difficulties in this area have been recognised, and part of that I guess has been addressed by the additional capital money that came to the Organisation in this year's budget.

But I think it's wrong of the critics to say that the external funding requirement has been a bad thing. My impression is that it's helped to make CSIRO a much more outward-looking, accountable, relevant organisation. Though that's a process that's probably been occurring anyway.

Working out priorities and striking a balance between the basic and applied ends of the research continuum is always a matter of healthy debate among the practitioners themselves.

But it's also a matter of responding to the needs of the community, who supply, and will continue to supply, the overwhelming bulk of the funds.

I think CSIRO is a healthier organisation for having been seen to be responsive to current demands.

CR: You don't see this direction we've gone in as a result of the funding targets as posing a threat to our role as honest broker in the community? That we might now have a vested interest in certain money-making ventures — namely the ones that are supplying part of our bread and butter — that would interfere with scientific objectivity?

RF: I see no evidence of that. I mean I understand that a case could be made for it hypothetically, but I have faith that the people in the Organisation who decide priorities and take on work of this kind will ensure that the objectives and integrity of the Organisation aren't compromised.

CR: The ethical standards in CSIRO are pretty high, but integrity not only has to be done but has to be seen to be done.

RF: I've seen no evidence that the integrity of the Organisation has ever been called into question.

CR: Our self-perception in CSIRO has changed since John Stocker came in. We used to be more — supportive, I suppose, is the word — and John Stocker's line has been much more to stress our leadership, and perhaps even to get us into policy-making, but certainly to have us push forward rather than be pulled along. What do you think?

RF: I think that's right. I think the Organisation is enormously fortunate to have had a Board led by Neville Wran and to have John Stocker as Chief Executive.

I think that the capacity exists, and the opportunity exists, for CSIRO to become much more pro-active and to lead in a variety of fields. I've found it, for example, in my time in the job, to be an enormously outward-looking, pro-active, lively organisation.

And I think that's a direction that is going to be good for the country and certainly going to be very, very good — has already proved to be very, very good — for morale. Just suberb.

CR: Do you think that it's appropriate that it should be CSIRO doing that rather than, say, the universities?

RF: I think the universities have a role to play, and a very important role to play, in research. But they have a number of objectives to meet in addition to providing high-quality research.

I think the pressure has been, and probably will remain, less, on the universities, to provide that relevant research, to answer those questions of today and tomorrow morning. The universities have the responsibility of producing skilled people, of course, who will, hopefully, come and work for CSIRO!

In that sense, CSIRO can be much more single-minded, I guess, on research.What are the means for us to be striking the right balance, getting the priorities right, working out where the country's going to be in the next decade, twenty years, and beyond? What are going to be the important industries in need of support and research?

CR: Finally, what do you hope to accomplish as Science Minister?

RF: I come in at a time when CSIRO's reputation has probably never been higher. It's seen as an effective, important Australian institution. I want to protect that, and I want to build on it.

A lot of that, of course, involves funding questions. Funding is not the only factor, but it's a necessary factor.

I've also come in at a time when Government recognition of the importance of science, and of CSIRO in particular, is very, very high. And there have been some practical results of that in this year's budget. Not as much as the Organisation would have wished, but life is full of compromises.

And there will be opportunities to address a whole range of broad questions concerning the future of science and the role of CSIRO, of the science agencies in general, and the universities, during the process of putting together our first White Paper. That's due next May, so it will be an exciting few months for us.

As far as the Organisation goes, I want to build on the achievements of my predecessors in the science area in general. I want to do what I can to secure our next generation of scientists: make sure they are at least as good as the ones we've been fortunate enough to have so far.

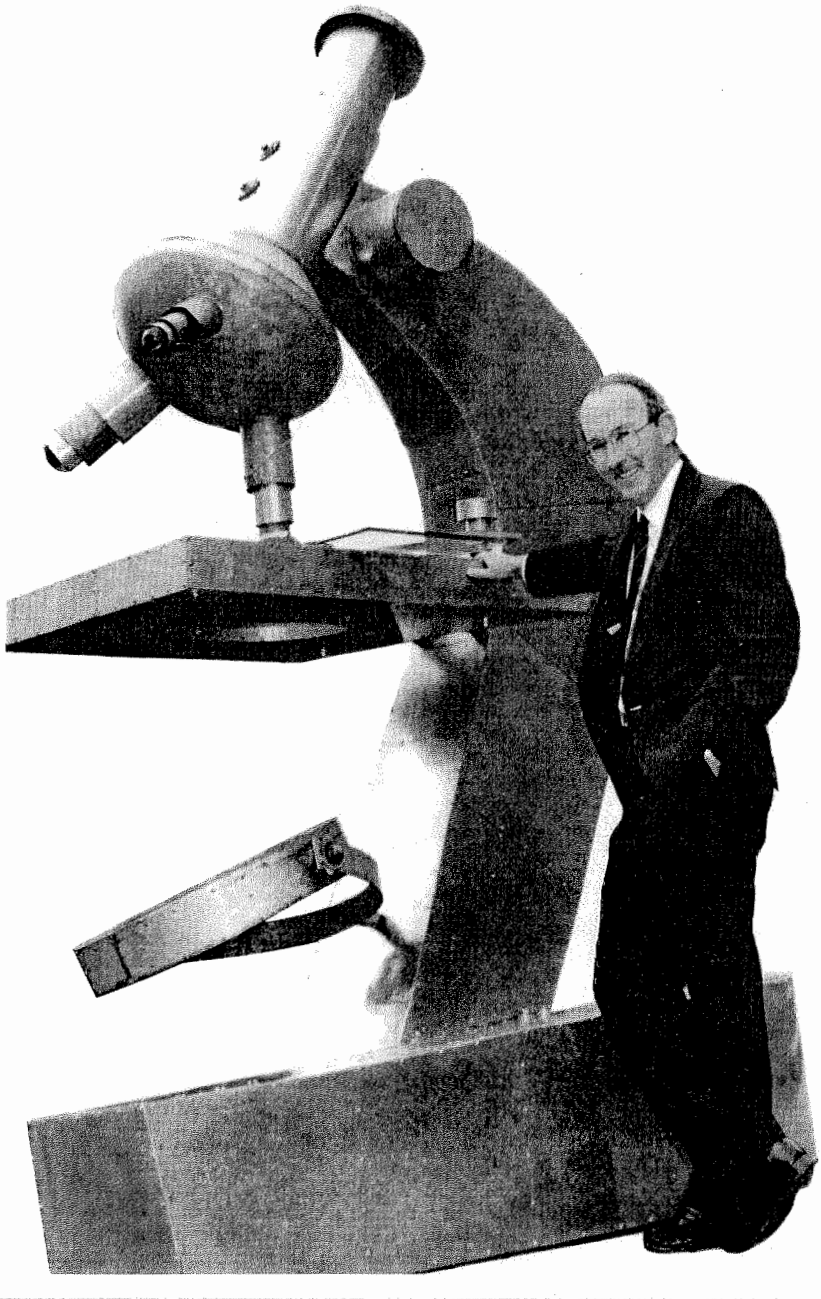
I want to make sure that science plays its role in meeting our economic objectives, in making our industry more innovative and more productive, and the opportunities *are* there.

From the kinds of stories I've been seeing in the press, I think there's certainly a better recognition now, among working journalists, of the contribution that science can make to industry — delivering innovative products that are going to find markets overseas and replace imports here, and thus make that necessary contribution to fixing our current economic problems and securing our economic future.

CR: You think then that getting the media more interested is an important part of bringing science forward in Australia?

RF: A very important part. It's been recognised in the Department for a long time. Hence the Michael Daly Awards, for example, for science journalism, which were awarded last week. Good representation of female journalists, too. Cathy Johnson from the Sydney Morning Herald won the overall prize. Very good work.

Apart from the particular benefit, that it might inspire people to take up careers in science, it's all part of building the general public awareness. You never lose, I think, by having that general acceptance of science, that feeling that science is a *Good Thing*.❖



Letters to the Editor

continued from page 2

Dear Editor,

Congratulations to CSIRO International Relations Centre (CIRC) for their recent compilation of *Funds for International Scientific Activities*. This useful summary includes application closing dates, necessary qualifications, contact addresses and even the likelihood of success! Perhaps the Corporate Services Department should now produce a compilation of *Funds for National Scientific Activities*.

Phil Schmidt
Division of Exploration Geoscience

Dear Editor,

I was dismayed by Dr Stocker's column in *CoResearch* 342. The metaphor for science that he recounted was not 'lovely', 'apt' or 'delightful' to me. I found it thoroughly inappropriate.

So, I suspect, must many of my colleagues, particularly the very few female scientists in the Organisation. In recounting this unseemly metaphor, and approving of it, Dr Stocker will appear to many to be saying that, in his mind, a scientist is a man; moreover, the metaphor carries the corollary that no woman can ever really know what science is about.

Later, we learn that a CSIRO scientist will appear in *A Country Practice*. Perhaps the 'corporate image' of a scientist might be best represented allegorically, by a white, middle-aged male, loitering around the haystacks of Wandin Valley looking for women to assault.

Dr Stocker is our leader: we look to him to see how to act. He has sent out precisely the wrong message, one that risks subverting the few Equal Employment Opportunity advances that have been made within CSIRO over the last few years.

Mark Lonsdale
Division of Entomology Darwin

As Editor of CoResearch I take responsibility for what I print, regardless of the source, and I'm always happy to apologise for mistakes. In this case, however, I thought, and still think, the joke referred to was funny and harmless. I don't think it was about women any more than it was about needles or haystacks.

Incidentally, the CSIRO scientist scheduled to appear in 'A Country Practice' next week is a female geneticist.—Ed.

Caption Competition

Above, the winner, by a mile. It was submitted by Geoff Roberts of the North Ryde Laboratories of the Division of Building, Construction and Engineering. Runners-up follow:
'At last what all CSIRO needs — a decision is made to get a round tuit' from Richard Gibbons, Division of Food Processing's Meat Research Lab in Brisbane; '(Overheard at a recent novice(?) politicians' meeting in Canberra) I'm not really sure; maybe it's a ... POLICY!' from Colin J. Veitch, Division of Wool Technology in Belmont; 'The one we intend fitting to Paul Keating has to be bigger and with a left-hand thread' from Heikki Mamers, Division of Forest Products, Clayton; 'Shall we call it SIROSAUCER or UFO-SIRO?' from Karl Armstrong, Division of Building, Construction and Engineering at Highett; and ' ... and this is the very disc he slipped. He's stood stooping at our meetings ever since' from Anon, 5th Floor [Hmmm]. Some sent multiple entries, of which a selection only — 'Ah yes, we're quite proud of this one. It's the thing that goes 'Zssssmm' inside the machine that goes 'Ping!'; and 'As you can see, this indispensable kitchen item will revolutionise the way you chop vegetables. But wait! Ring now, and you also get ... ' both from Melissa Roffey, Division of Materials Science and Technology in Clayton. The following five entries are all from Albert Trajstman of the IAPP Biometrics Unit in Parkville: 'I don't care what the fools in Marketing say ... I reckon that the invisible CD player is here to stay'; 'But waiter, we asked for the large pizza!'; 'Well gentlemen, unlike our plastic note I think that the ten-dollar coin will prove very popular'; 'Are you sure this is what John wants to be known as the Stocker Medal?'; and 'If we just look natural they'll never think of a caption to this one'.
Below is another for you to try your wits on, but suitable photographs are getting harder to find (the quarry are getting cunning!) so if anyone has any likely ones ... ? (CSIRO-related, please.)

CoResearch
No. 344 November 1991 CSIRO's staff newspaper
CSIRO AUSTRALIA

'Bondi' Beech wins Sir Ian McLennan Award

Mr Don ('Bondi') Beech, of the Division of Tropical Crops and Pastures in Queensland, has taken out this year's Sir Ian McLennan Achievement for Industry Award for his work in turning the humble chickpea into an $80 million annual export industry for Australia.

The Award brings him a grant of up to $10,000, to be spent on an overseas study visit connected with the achievement, as well as the Medal itself.

CSIRO Chairman Neville Wran, who presented the Award, called Mr Beech's work 'visionary'.

Mr Beech first recognised the commercial potential of chickpeas in the 1960s, and then spent years doggedly researching and testing different varieties and setting up markets for the Australian crop in Asia.

He chose a chickpea variety, called Tyson, that successfuly matched Australian growing conditions with what the market was demanding.

The industry is now growing fast, with experts predicting it could be bringing $150 million a year into Australia by the end of the 1990s.

Chickpeas and chickpea flour have long been common ingredients in Middle East and Asian food, familiar to us in dishes like hummus and dhal, but also much used in their soups and batters.

Now Australian chickpea exports to the USA,. UK and Canada are also growing steadily, with some British fish and chip shops even using chickpea flour in their fish batter.

Mr Wran said that it was Mr Beech's leadership and market research, as much as his scientific work, that had made the industry so successful.

'In the course of 41 years at CSIRO,' he said, 'Mr Beech has led the way in innovations in his field. He has shown the value of knowing the marketplace as well as the microscope, and he has been the cornerstone in building a major new industry for Australia.'

Two organisations outside CSIRO were given plaques in recognition of their contributions. They were the Queensland Grain Growers Association, whose members helped with trials of the new chickpea varieties, and Pars Ram Brothers (Aust) Pty Ltd, a seed company that helped with marketing advice and commercialisation.

The Trustees of the Award also decided to give Certificates of Commendation to two others among the CSIRO nominees.

Mr Les Edye, Division of Tropical Crops and Pastures, won a Certificate for his work on developing new stylo cultivars for the northern beef industry. His new varieties are reported to be increasing beef production by about $13 million a year.

The other Certificate winner was Dr Ronald Kemp of the Division of Applied Physics. Dr Kemp recently developed new technology to determine temperature accurately during the manufacture of high-voltage insulated cable.

His work has enabled industry partner Olex Cables to gain a valuable supply contract in Australia, and the company is now planning to break into the overseas market for high-voltage cables.

The Award Ceremony was held on Tuesday, October 29, in the Bayside Room of the Sydney Convention and Exhibition Centre at Darling Harbour.

The Sir Ian McLennan Achievement for Industry Award was established in 1985 to recognise and reward scientists who have taken their work out of the laboratory and into the marketplace to the benefit of Australia.

Sir Ian himself, after whom the Award was named, was Chairman of BHP for many years and later Chairman of the ANZ Banking Group and of Elders IXL. He has been associated with Australian industry for more than 50 years and is an enthusiastic supporter of new technology.❖

Above, left to right, Sir Peter Derham, Chairman of Trustees for the Sir Ian McLennan Achievement for Industry Award, Mr Don ('Bondi') Beech, winner of the Award, the Hon. Neville Wran, AC QC, Chairman of CSIRO, and Dr John Stocker, Chief Executive of CSIRO. The photograph was taken at the Award ceremony at the Sydney Convention and Exhibition Centre, Darling Harbour, on October 29 by John Masterson of the CSIRO Australia Telescope National Facility. Certificates of Commendation went to Mr Les Edye, also of the Division of Tropical Crops and Pastures,and to Dr Ronald Kemp, Division of Applied Physics. (See adjacent story.)

What? The best *bodies* in Australia, too?

CSIRO has been able to reduce its yearly Comcare premium rate by 38 per cent over the past year — from $4.5 million to about $2.7 million .

The average reduction over the period for all Commonwealth Agencies is only 8 per cent .

The reduced premium reflects a reduction in the number of claims and, more importantly, a reduction in the length of time each claimant has spent away from work.

Of the $1.8 million saving, $500,000 is to be ploughed back into health within CSIRO. The Executive Committee agreed at its September meeting that this amount should be allocated in the 1991–92 financial year to specific health and safety initiatives.

$200,000 of it is earmarked for corporate projects:

•training of health and safety representatives and health and safety committee members, as required under the new Occupational Health and Safety legislation;

•implementing corporate strategy on hazardous chemical management;

•researching and developing strategies in key areas targeted by Comcare for premium reduction, such as heavy lifting and workplace stress.

A further $300,000 will be available to Institutes and Divisions for specific projects aimed at improving health and safety on the sites. These can cover a broad range of activities, such as changing the workplace itself or buying new equipment.

If you'd like to know more you can call Warren Smith, Occupational Health and Safety Manager, on 06 276 6440.❖

A case of inordinate auditing?

Photograph by John Houldsworth

The jungle was still, strangely still, as mottled light fell across water droplets cupped in the lowest leaves. The grunting band pushed forward, pale beings in pith helmets, incongruous, unadapted, unsure in this other-world.

At last, the clearing, and just as expected, the Encounter with the Tribe, spoken of in many legends. 'We are here,' declared the men from the Australian National Audit Office, 'to report'.

'We have heard that others have come bearing bright beads, which you have traded, used and sequestered in your shambling houses. We bear no beads. We do not know you. We do not know your environment or understand your jungle.

'Do not relate to us your legends nor confuse us with your culture. Tell us not of neighbouring tribes nor of your progress and experience in establishing relationships with the creeping cities.

'We demand only access to your beads that we may report.'

And so they left again the clearing in the land of the Sirollas and, wondering greatly, produced their report.

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The Auditor-General's recent Efficiency Audit of CSIRO's external funding (Audit Report No. 8, 1991–92) has had some coverage in the press and copies have been distributed to the Divisions.

Its main conclusions can be summarised thus:

CSIRO has been set the target of achieving 30 per cent external earnings in a very short time. It has done so. Many systems still need to be put into place or tightened up to improve the efficiency of gathering and using these funds to ensure a maximum return on effort invested.

I agree with this and, as the report notes, 'the CSIRO Board and Chief Executive Officer are aware of issues covered in this report and have taken the initiative in addressing their major concerns.'

What the report utterly failed to do was to set our effort and practices into any national or international context. Apart from questioning the wisdom of the quite arbitrary 30 per cent target (which was probably not their role) the ANAO team missed the chance to analyse and set CSIRO in the business environment in which we work. They spoke of the need for uniform policies which should be applied throughout all our business activities, with no apparent appreciation of the intricacies and differences involved in working with large manufacturing companies, rural industry research corporations, foreign-owned multinationals, government departments and fragile start-up companies.

Each has its own needs and cultures. In some cases research agreements involve short-term, tactical research. In others, long-term strategic programs that represent the Division's mainstream research activities are involved.

We must respond to the ANAO report by continuing to improve our marketing, our project management, our costing and pricing practices.

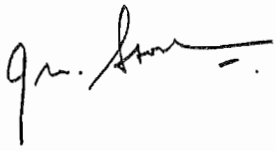
Executive Committee members discussed this at the recent Executive Committee Workshop at Coff's Harbour. Dr Chris Walsh, from the Division of Applied Physics, who is at present on secondment to my office as part of the Leadership Development Program, prepared a paper and led a spirited discussion about ways in which we might tackle these complex issues.

As a group we identified the issues and decided that one model would not encompass all the complexities of the various sorts of arrangements CSIRO has to enter into to get the best results from its research. We were able to define several distinct categories of contractual arrangements, ranging from short-term research contracts from which we need to recover full costs and perhaps a profit margin, all the way through to strategic research, where we might be putting in 50 per cent of the resources ourselves.

In consultation with Chiefs, Divisional Business Managers and Sirotech staff we now need to develop a set of principles that will allow various models for collaboration with and delivery to our external partners.

A start was made with the earlier booklet 'Commercial Relationships with CSIRO', but we now need to define a flexible model that will enhance our use of external funds.

One thing is clear: external earnings targets have helped to focus our Organisation's attention on external delivery. Our jungle will never be quite the same again.



Attention all staff!

Don't forget to tune in to 'A Country Practice' on the 18th and 19th of this month. That's when CSIRO is making its first

Letters to the Editor

Dear Editor,

With the advent of Spring comes the thought that the contract for at least some of the Institute Directors must be within a year of expiry. With the rather extraordinary hierarchical line management system that CSIRO has chosen to adopt, the position of Institute Director is an extremely powerful one, able to control completely the shape, directions, and budgets of the subordinate Divisions, with virtually no limiting factor outside of criminal law. Although one might prefer a more horizontal, consultative structure, the adoption of such appears to be most unlikely.

It occurs to me that in choosing a person for such a powerful position, it would be good if there were a mechanism by which the future subjects of the ID were able to express opinions concerning the suitability of the short-listed applicants to the selection committee — especially since the quality and morale, and concomitantly, the scientific output, of the Institute staff will be strongly affected by the choice of ID. In particular, I propose the following:

1. that the names of the selection committee be made known;

2. that the names of the short-listed applicants, together with a brief biography for each, be circulated to the relevant sites for discussion;

3. that each candidate be requested to address meetings at the major sites of each Institute and be open to questions; and

4. that the selection committee be prepared to read and consider the views of those staff members who care to express a written opinion.

The above proposals would appear to be quite reasonable in view of the fact that CSIRO is supposed to be implementing an industrial participation policy. The point of this letter is to strongly urge staff with similar points of view to write to Dr Stocker and/or the Board expressing concerns, opinions and suggestions about this matter.

Art Raiche
Exploration Geoscience

Dear Editor,

Despite the article on 'Clever Clover' in your last issue, where you gave him to the Centre for Environmental Mechanics, Dr Richard Stirzaker remains on the staff of the Division of Plant Industry.

'Clever Clover' continues to attract a steady flow of orders for the $10 kits — 5,000 plus so far — and a stream of general correspondence. Our favourite to date reads:

YES, PLEASE ... RUSH ME your exciting 'no more digging ever' special offer!

I CAN HARDLY WAIT for an end to WASTING MY TIME in the vegie patch.

CONGRATULATIONS, DOCTORS STIRZAKER AND WHITE, the gardener's friends!

Very Sincerely,
ANNE BENOY

It's encouraging to know just how warmly Australia feels about its CSIRO.

Toss Gascoigne
Information Officer
Centre for Environmental Mechanics

(More letters on page 6)

Hats off to Hari

He's done it again! He must have a room full of them by now. This time it's the Walter Boas Medal ...

The Australian Institute of Physics has awarded its 1991 Walter Boas Medal to Dr P. (Hari) Hariharan, Chief Research Scientist at the Division of Applied Physics in Sydney. The Institute established the award in 1982 'to promote excellence in research in Physics in Australia'.

Dr Hariharan worked initially at the National Physical Laboratory, New Delhi, and the National Research Council, Ottawa.

He was then Professor at the Indian Institute of Science, Bangalore, before joining the Division of Applied Physics. His active research is in the fields of interferometry and holography.

Dr Hariharan is one of CSIRO's most active and celebrated scientists. He has to his credit more than 150 publications in international journals as well as three books — 'Optical Holography' (Cambridge University Press, 1984), 'Optical Interferometry' (Academic Press, 1985) and 'Selected Papers in Interferometry (SPIE — the International Society for Optical Engineering, 1991).

He is a Fellow of the Institute of Physics, London, the Optical Society of America, SPIE, the Royal Photographic Society, the Indian Academy of Science and the Indian National Academy of Science.

He is Chairman of the Australian National Committee for Optics and was the President of the Australian Optical Society in 1988.

He is also currently Treasurer of the International Commission for Optics and President of the Asia–Pacific Optics Federation, and was recently elected to the Board of Directors of SPIE.

Dr Hariharan was the recipient of the Optical Society of America's Fraunhofer Award for optical engineering in 1989, the Henderson Medal of the Royal Photographic Society of Great Britain in 1990 and the Thomas Young Medal of the Institute of Physics, London, earlier this year.

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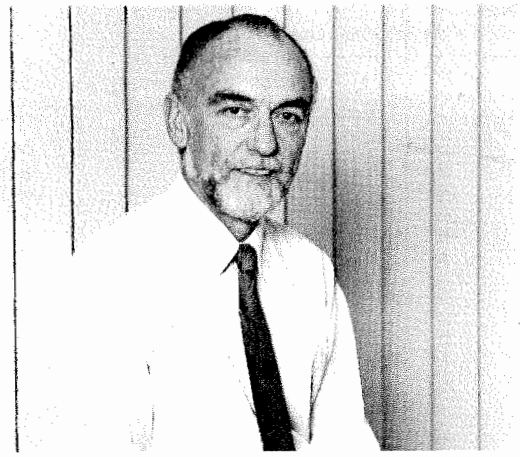

Above, Dr David Rand, winner of the 1991 Faraday Medal.

... and to David

Dr David Rand of the CSIRO Division of Mineral Products has won the 1991 Faraday Medal.

The Electrochemistry Group of the Royal Society of Chemistry presents this Medal every two years to a distinguished electrochemist working abroad.

Past winners have included Levich, Gerischer and Bockris — all acknowledged as major contributors in the field of electrochemistry.

Over the past 25 years Dr Rand has made many important contributions to electrochemistry, including work on fuel cells, electrocatalysis, sulphide mineral processing and, more recently, battery systems.

His work on battery systems has led to important advances in battery technology.

Apart from his scientific work, Dr Rand has, over the years, been a persuasive advocate of the role of alternative power sources. His colleagues have called him 'an inspiration to researchers and developers of electrochemical energy-storage systems, never fearing to be controversial when the need arose'.

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New member for CSIRO Board

Mr Nigel Stokes has joined the CSIRO Board.

Mr Stokes was born and educated in Sydney and is a graduate in both Economics and Arts.

He has had considerable experience at senior levels with both the Commonwealth and New South Wales Governments.

He was formerly with the Commonwealth Department of the Treasury as an economist, and spent ten years as a financial adviser to the new South Wales Government.

Mr Stokes was a Director of the Electricty Commission of New South Wales from 1982 to 1989.

He is currently a Director of Continental Venture Capital Limited and an Adviser to Bankers Trust Aust Ltd. ❖

Wheat Research Unit test will help detect coeliac disease

Researchers from the CSIRO Wheat Research Unit in Sydney have developed a simple test that will make it easier to detect coeliac disease — an intolerance to the gluten protein in cereals that affects about one in 2,000 Australians. The test kits are made and marketed by Medical Innovations Ltd, an Australian based company.

Project Leader Dr John Skerritt, together with Dr Judit Gonczi and Ms Amanda Hill, all from the Wheat Research Unit, worked with Dr John Mitchell from the Prince of Wales Children's Hospital in Sydney to develop the test.❖

THE

Hawke opens Plant Science Centre

One of the first of the Co-operative Research Centres, the Plant Science Centre in Canberra, was officially opened on September 26 by Australian Prime Minister Bob Hawke.

The Plant Science Centre partners are the CSIRO Division of Plant Industry, the Australian National University, Biocem Pacific Pty Ltd and industry associates from Australian agribusiness.

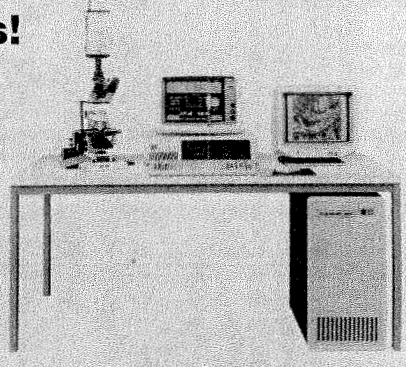
The Division of Plant Industry and the A.N.U. both have international reputations for excellence in plant research and education. Biocem Pacific is a plant research and biotechnology company and a component of the world's third-largest seed company.

Dr Jim Peacock, Chief of the Division of Plant Industry and Co-director of the Centre, said, 'The Centre will give Australian industry an opportunity to focus around a very powerful plant research team with research capability unprecedented in Australian plant biology.'

The Centre would also encourage more people to enter the area of plant biology, he said, where there is an acute shortage of qualified scientists.

Mr Hawke said that Australia had produced many world-class researchers who would now, through the Centre, have an opportunity to work together, backed by the equipment and facilities they needed to help Australia gain and keep a leading edge in research.

'I've been staggered,' he said, 'by what I've seen at CSIRO. It says something not only about the quality of the researchers but about the quality of their exposition that someone as unscientifically minded as I am already has a total grasp of what you're about. May I say I'm fully impressed by what you're about and what you're achieving.'❖



Ross Free under the microscope

The way our Ministers seem to keep disappearing on us, CoResearch thought it might be time to do an in-depth, or in any case at-length, interview with our latest, Ross Free ...

CoResearch: As our first Minister with a background in science education, how do you see CSIRO's educational role in the community?

Ross Free: I think it's a very important one. I've been impressed with what CSIRO does in this area. I think the notion of using working scientists to show that they are real, live, normal people doing important and interesting work is an excellent way of helping students nearing the end of their secondary schooling to look at science as a possible career.

CR: Are you thinking of our Women in Science Project, where some of CSIRO's women scientists go out to speak at public schools?

RF: That in particular. A lot was said at the ANZAAS conference last week — and quite rightly — about the under-representation of women in science and engineering. We certainly do need to do a lot more to attract women towards courses, and careers, in science and engineering.

CR: Speaking of the ANZAAS conference — I believe you made some criticism of the Co-operative Research Centres in your speech there?

RF: Yes. The Government, in its March Industry Statement, decided to establish a task force to investigate commercialisation of Australian research. It's an old story, and one we all know. Brilliant research is done here, great science. Far too often it has to go off overseas to find a commercial partner. So it's a well understood problem, I think. But not too many people understand the answers.

Anyway, as part of the consultation process the task force has been asking industry about its reaction to the general scene, and in particular its reaction to the co-operative research centres.

What I said in Adelaide was that to date they had not received universal approval; they had not met everyone's expectations. That's certainly the anecdotal evidence from the task force, that some people in industry feel that industry is not being involved to the extent that is most desirable.

But the other thing I did say in Adelaide was that I was fully confident that the CRCs would be achieving this objective. We always knew it was going to be difficult to get public sector research and industry working together, because part of the commercialisation problem was the lack of communication between research producers and research users.

In a lot of ways the participants in the round one application and approval process were trail blazers, and people in the second and third rounds are going to build on experience gained.

So we've come a long way. Not as far as we'd like to yet, but I am confident that we will. That will mean, particularly, educating industry and ensuring that industry is better informed about the possibilities that exist.

I don't want to anticipate too much of what the commercialisation task force might say because I don't know. I have some hints, but it's their report and it's yet to be finalised. Still, I do think that one of the themes will be that we have excellent scientists, but we need scientists with management skills as well.

Similarly, on the industry side, I think that a comment that might well be made is that we need people working in industry who are able to communicate with people working in research.

CR: And how is that going to come about?

RF: I think that, increasingly, opportunities are going to develop where those people who have those necessary skills will be positioned to move in and extract benefits. I guess that's where many of the people in CSIRO are well positioned, because they are used to performing research and working with researchers, and they are also used to having all the headaches of managing parts of a large organisation.

CR: Do you think that in future people who concentrate on research only or business only are going to fall by the wayside?

RF: I prefer to be more positive about it than that. I don't think that able specialists in this country will ever fall by the wayside. I'd like to think that our research organisations are big enough and diverse enough to be able to accommodate people with a whole range of skills and specialisations.

CR: How certain can we be of continuing to get good people across that broad range of skills and specialisations, though? There has been a lot of talk, inside CSIRO particularly, but also outside it, over the lowering of standards for entry into science degree courses. It has been reported that the standard required is now lower than for any other discipline, and scientists are worried about the quality of the researchers who will replace them.

RF: Absolutely. I think we should all be concerned about the next generation of scientists. We've been very lucky in this country for a long time. It hasn't happened by accident, and I think we need to assume the responsibility for bringing on more of our best and brightest into the next generation of scientists.

Cut-off points for entry into science courses have certainly dropped over the last ten years. This is partly a reflection of the proliferation of tertiary education institutions, but it's also, and more, I think, a reflection of the fact that courses in law, business and commerce have tended to offer the high salaries, the Wall Street standard of living, the movie-style glamour. You can't blame kids for being attracted.

But I think that will change. There have been modest improvements in scientists' salaries, for one thing.

Another factor is that the gyrations of the stockmarkets in the late eighties demonstrated that you can't always count on satisfaction and security in the business area. Certainly the demand for those people fluctuates according to the economic conditions, and that is not true to the same extent, I'd suggest, in the sciences. So science gets a tick for that one, for security.

There is also the job satisfaction aspect, and that's very important. Sure, young people are concerned about the kinds of salaries they might be earning in the future when they look at tertiary options. But I think you should never forget that young people are terribly idealistic, and you can fire their imagination much more, I think, with the challenge of getting involved in research that might address global questions like disappearing species, or cleaning up Eastern Europe, or global warming, for example.

CR: But that last has been true for many years now, and it hasn't been increasing the enrolments. We need people to go through to PhD level or similar, not just to be interested in those matters.

RF: Except that you've never lost those people. A little bit of science is good for everybody. A lot of science is good for some, and hopefully for some of the intellectual top storey.

CR: Also, the problems you mention as firing the imaginations of the young are all environmental ones, and that's correct, but there is no money to be made from environmental science, so the public must pay.

RF: Yes, it tends to be public money there; that's right.

CR: So we need to get kids interested in science generally, not just the environmental side?

RF: Yes. One thing that is being increasingly recognised is that you need to interest and inspire them younger, perhaps, than people from my generation have been led to expect.

Science used to be something exciting that was going to happen when you got to high school. Education Departments, I think, are increasingly recognising that you've got to do a lot more in the Kindergarten to Year Six period. Just this year the NSW Education Department launched a syllabus document dealing with just that — with science in infant and primary schools.

CR: What about the taking of public body science out into the community, as CSIRO has been doing through the Double Helix Science Club?

RF: Yes, with real scientists, with Double Helix, and with other work that CSIRO does, with events like the 1993 Canberra Science Festival, with Open Days, with work the universities are doing ... I'm off to Townsville tomorrow, for example, to open the James Cook Science Festival.

CR: Our 'Project Ambassador' encourages CSIRO scientists, as well as other staff, to develop a high public profile, and many have been doing that. But there are still some who don't quite like to, who feel that they are not doing their job properly if they are out there talking instead of working at the bench. And there has been a tendency to criticise their own who have done it.

RF: They are far too modest. Every kid in Canberra knows who Mal Meninga is, who Ricky Stuart is. They wouldn't know Matthew Bailes. They wouldn't know Ted Ringwood. They wouldn't know Hal Hatch.

I think that's a pity, because those are three outstanding Australians who have made world-standard contributions to science since June.

CR: It's often been said that Australians are anti-intellectual, that they won't accept intellectuals as heroes. Do you think that's still part of it?

RF: Well, I don't know. Our intellectuals seem to get great obituaries — like Manning Clark and Patrick White. It's probably the fate of the intellectual not to be recognised until the point of departure. But there's every reason to put an effort into changing that. It's not necessary to *replace* our sporting heroes with outstanding scientists — there's room on that pedestal for others as well.

CR: In his column for this issue of *CoResearch* John Stocker answers criticism of CSIRO that appeared in the Auditor-General's most recent report. There have been letters in the press chiming in with that criticism, criticising our management practices and claiming that we are subsidising industry at the expense of basic research, and so on. What do you think?

RF: I think that the people who've commented on the Auditor-General's report, and probably the others who say they agree with it, have not had the benefit of reading the Auditor-General's report, or CSIRO's response to it.

The Auditor-General identified a number of problem areas that were already well understood by CSIRO. Many of them were in the process of being addressed.

The particular problem of CSIRO's not charging the full cost of the research it was performing for industry is one that's been well recognised. It's

a difficult one, because the Government has required CSIRO to find 30 per cent of its funding from external earnings.

Now, in doing that CSIRO has worked very hard to meet the needs of external funders and in many cases has formed excellent working relationships with them.

But it's a competitive environment. The universities are also involved in that kind of exercise, and the rural research funds, some of them, are going through periods of difficulty, and in some cases maybe can't or won't come to the party as much as people would like.

CSIRO's difficulties in this area have been recognised, and part of that I guess has been addressed by the additional capital money that came to the Organisation in this year's budget.

But I think it's wrong of the critics to say that the external funding requirement has been a bad thing. My impression is that it's helped to make CSIRO a much more outward-looking, accountable, relevant organisation. Though that's a process that's probably been occurring anyway.

Working out priorities and striking a balance between the basic and applied ends of the research continuum is always a matter of healthy debate among the practitioners themselves.

But it's also a matter of responding to the needs of the community, who supply, and will continue to supply, the overwhelming bulk of the funds.

I think CSIRO is a healthier organisation for having been seen to be responsive to current demands.

CR: You don't see this direction we've gone in as a result of the funding targets as posing a threat to our role as honest broker in the community? That we might now have a vested interest in certain money-making ventures — namely the ones that are supplying part of our bread and butter — that would interfere with scientific objectivity?

RF: I see no evidence of that. I mean I understand that a case could be made for it hypothetically, but I have faith that the people in the Organisation who decide priorities and take on work of this kind will ensure that the objectives and integrity of the Organisation aren't compromised.

CR: The ethical standards in CSIRO are pretty high, but integrity not only has to be done but has to be seen to be done.

RF: I've seen no evidence that the integrity of the Organisation has ever been called into question.

CR: Our self-perception in CSIRO has changed since John Stocker came in. We used to be more — supportive, I suppose, is the word — and John Stocker's line has been much more to stress our leadership, and perhaps even to get us into policy-making, but certainly to have us push forward rather than be pulled along. What do you think?

RF: I think that's right. I think the Organisation is enormously fortunate to have had a Board led by Neville Wran and to have John Stocker as Chief Executive.

I think that the capacity exists, and the opportunity exists, for CSIRO to become much more pro-active and to lead in a variety of fields. I've found it, for example, in my time in the job, to be an enormously outward-looking, pro-active, lively organisation.

And I think that's a direction that is going to be good for the country and certainly going to be very, very good — has already proved to be very, very good — for morale. Just suberb.

CR: Do you think that it's appropriate that it should be CSIRO doing that rather than, say, the universities?

RF: I think the universities have a role to play, and a very important role to play, in research. But they have a number of objectives to meet in addition to providing high-quality research.

I think the pressure has been, and probably will remain, less, on the universities, to provide that relevant research, to answer those questions of today and tomorrow morning. The universities have the responsibility of producing skilled people, of course, who will, hopefully, come and work for CSIRO!

In that sense, CSIRO can be much more single-minded, I guess, on research.What are the means for us to be striking the right balance, getting the priorities right, working out where the country's going to be in the next decade, twenty years, and beyond? What are going to be the important industries in need of support and research?

CR: Finally, what do you hope to accomplish as Science Minister?

RF: I come in at a time when CSIRO's reputation has probably never been higher. It's seen as an effective, important Australian institution. I want to protect that, and I want to build on it.

A lot of that, of course, involves funding questions. Funding is not the only factor, but it's a necessary factor.

I've also come in at a time when Government recognition of the importance of science, and of CSIRO in particular, is very, very high. And there have been some practical results of that in this year's budget. Not as much as the Organisation would have wished, but life is full of compromises.

And there will be opportunities to address a whole range of broad questions concerning the future of science and the role of CSIRO, of the science agencies in general, and the universities, during the process of putting together our first White Paper. That's due next May, so it will be an exciting few months for us.

As far as the Organisation goes, I want to build on the achievements of my predecessors in the science area in general. I want to do what I can to secure our next generation of scientists: make sure they are at least as good as the ones we've been fortunate enough to have so far.

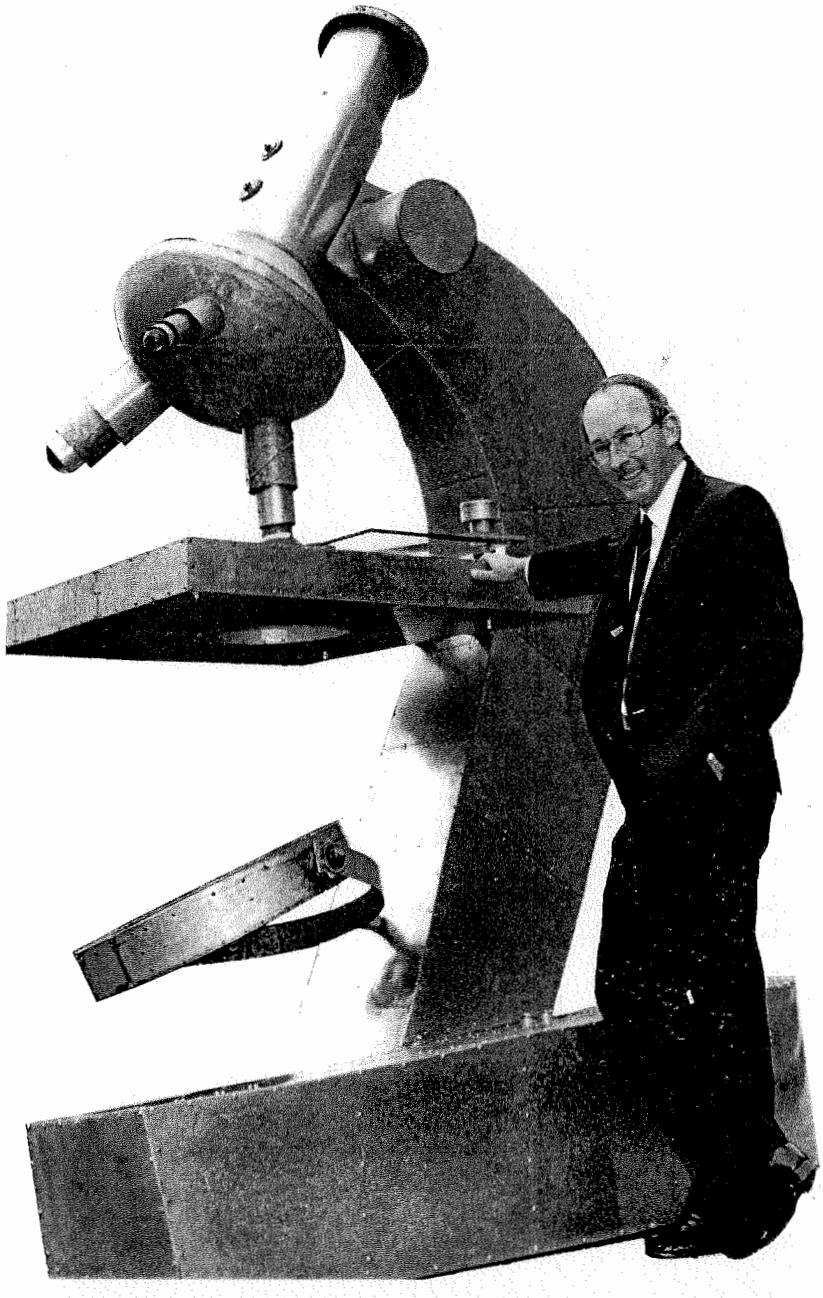
I want to make sure that science plays its role in meeting our economic objectives, in making our industry more innovative and more productive, and the opportunities *are* there.

From the kinds of stories I've been seeing in the press, I think there's certainly a better recognition now, among working journalists, of the contribution that science can make to industry — delivering innovative products that are going to find markets overseas and replace imports here, and thus make that necessary contribution to fixing our current economic problems and securing our economic future.

CR: You think then that getting the media more interested is an important part of bringing science forward in Australia?

RF: A very important part. It's been recognised in the Department for a long time. Hence the Michael Daly Awards, for example, for science journalism, which were awarded last week. Good representation of female journalists, too. Cathy Johnson from the Sydney Morning Herald won the overall prize. Very good work.

Apart from the particular benefit, that it might inspire people to take up careers in science, it's all part of building the general public awareness. You never lose, I think, by having that general acceptance of science, that feeling that science is a *Good Thing*.❖



Letters to the Editor

continued from page 2

Dear Editor,

Congratulations to CSIRO International Relations Centre (CIRC) for their recent compilation of *Funds for International Scientific Activities*. This useful summary includes application closing dates, necessary qualifications, contact addresses and even the likelihood of success! Perhaps the Corporate Services Department should now produce a compilation of *Funds for National Scientific Activities*.

Phil Schmidt
Division of Exploration Geoscience

Dear Editor,

I was dismayed by Dr Stocker's column in *CoResearch* 342. The metaphor for science that he recounted was not 'lovely', 'apt' or 'delightful' to me. I found it thoroughly inappropriate.

So, I suspect, must many of my colleagues, particularly the very few female scientists in the Organisation. In recounting this unseemly metaphor, and approving of it, Dr Stocker will appear to many to be saying that, in his mind, a scientist is a man; moreover, the metaphor carries the corollary that no woman can ever really know what science is about.

Later, we learn that a CSIRO scientist will appear in *A Country Practice*. Perhaps the 'corporate image' of a scientist might be best represented allegorically, by a white, middle-aged male, loitering around the haystacks of Wandin Valley looking for women to assault.

Dr Stocker is our leader: we look to him to see how to act. He has sent out precisely the wrong message, one that risks subverting the few Equal Employment Opportunity advances that have been made within CSIRO over the last few years.

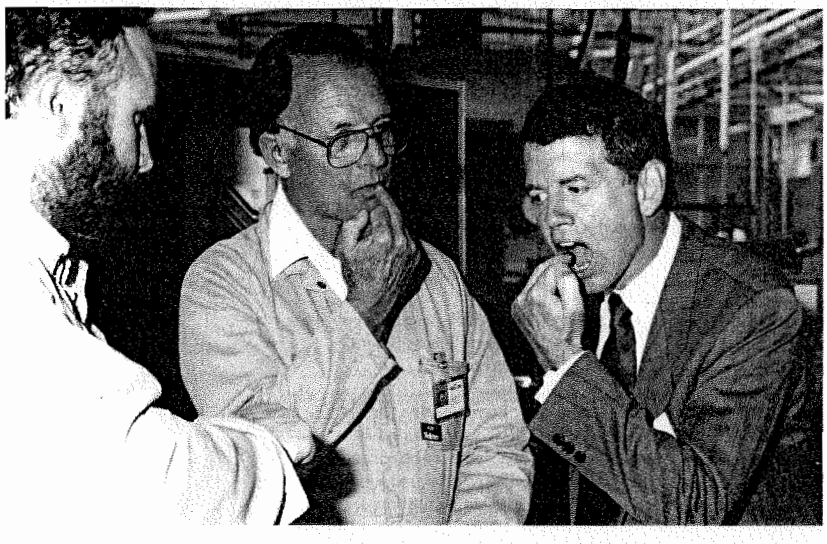
Mark Lonsdale
Division of Entomology
Darwin

As Editor of CoResearch I take responsibility for what I print, regardless of the source, and I'm always happy to apologise for mistakes. In this case, however, I thought, and still think, the joke referred to was funny and harmless. I don't think it was about women any more than it was about needles or haystacks.

Incidentally, the CSIRO scientist scheduled to appear in 'A Country Practice' next week is a female geneticist.—Ed.

Caption Competition

Above, the winner, by a mile. It was submitted by Geoff Roberts of the North Ryde Laboratories of the Division of Building, Construction and Engineering. Runners-up follow:
'At last what all CSIRO needs — a decision is made to get a round tuit' from Richard Gibbons, Division of Food Processing's Meat Research Lab in Brisbane; '(Overheard at a recent novice(?) politicians' meeting in Canberra) I'm not really sure; maybe it's a ... POLICY!' from Colin J. Veitch, Division of Wool Technology in Belmont; 'The one we intend fitting to Paul Keating has to be bigger and with a left-hand thread' from Heikki Mamers, Division of Forest Products, Clayton; 'Shall we call it SIROSAUCER or UFO-SIRO?' from Karl Armstrong, Division of Building, Construction and Engineering at Highett; and ' ... and this is the very disc he slipped. He's stood stooping at our meetings ever since' from Anon, 5th Floor [Hmmm]. Some sent multiple entries, of which a selection only — 'Ah yes, we're quite proud of this one. It's the thing that goes 'Zssssmn' inside the machine that goes 'Ping!'; and 'As you can see, this indispensable kitchen item will revolutionise the way you chop vegetables. But wait! Ring now, and you also get ... ' both from Melissa Roffey, Division of Materials Science and Technology in Clayton. The following five entries are all from Albert Trajstman of the IAPP Biometrics Unit in Parkville: 'I don't care what the fools in Marketing say ... I reckon that the invisible CD player is here to stay'; 'But waiter, we asked for the large pizza!'; 'Well gentlemen, unlike our plastic note I think that the ten-dollar coin will prove very popular'; 'Are you sure this is what John wants to be known as the Stocker Medal?'; and 'If we just look natural they'll never think of a caption to this one'.
Below is another for you to try your wits on, but suitable photographs are getting harder to find (the quarry are getting cunning!) so if anyone has any likely ones ... ? (CSIRO-related, please.)



Pixelgrams to be marketed

Dr Mike Murray, Chief of the Division of Materials Science and Technology, officially announced on October 11 that an option had been granted to a Queensland company, Tambabrook Pty Ltd, to commercialise CSIRO's 'pixelgram' technology.

Pixelgrams are optical devices carrying images that vary according to the angle at which they are viewed. They can be hot-stamped onto documents such as banknotes, cheques or credit cards to protect against forgery.

Unlike the holograms currently used on credit cards, pixelgram devices can generate small, high-definition images of a human face that are easily recognisable under a wide range of lighting conditions.

Under the option agreement, Tambabrook will have until the end of this year to finalise commercial arrangements. If the option is exercised the company will invest in further research and development of the technology within CSIRO.❖

Verco Award to Soils scientist

The Royal Society of South Australia has chosen Dr Alan Bird, a Chief Research Scientist with the Division of Soils, as the winner of the 1991 Verco Award for his work of outstanding merit in the area of natural sciences.

Dr Bird's research has focused on the biology of nematodes and their interactions with micro-organisms. He has published more than 100 papers in international journals and written a book. The second edition of this book — 'The Structure of Nematodes' — has recently been published by Academic Press, San Diego.

In 1983 Dr Bird was made a Fellow of the Society of Nematologists for his contribution to nematology. ❖

CSIRO man advises UN on CFC destruction

Dr Peter Wailes, Deputy Chief of the Division of Chemicals and Polymers, has been chosen to join a Technical Committee of the United Nations Environmental Programme.

He will advise on the most appropriate destruction technologies for chlorofluorocarbons (CFCs), halons and other compounds listed in the Montreal Protocol.

Dr Wailes joined eight other international experts for the committee's first meeting held at Nairobi, Kenya, in August, and further meetings will be held this month in Frankfurt and early next year in Singapore.

Dr Wailes said that the committee will set the technologies, including the monitoring and regulatory criteria, for the future destruction of CFCs around the world.

'High temperature incineration is the only commercial operational system,' he said, 'but the committee has agreed to focus on currently available technologies. The Plascon system under development by CSIRO falls in this category, but trials have yet to be done with CFC destruction.'

The committee's report is to be presented to the fourth meeting of the Parties to the Montreal Protocol in September 1992.

Dr Wailes said that he found the sense of purpose of the committee's task to be very stimulating and most relevant to Australia's problems with disposing of intractable wastes.❖

New Chief for Forestry

Dr Glen Kile has been appointed Chief of the CSIRO Division of Forestry for a five-year term from February 1992.

Dr Kile is currently responsible for the Division's operations in Tasmania and is Director of the newly established Co-operative Research Centre for Temperate Hardwood Forestry in Hobart.

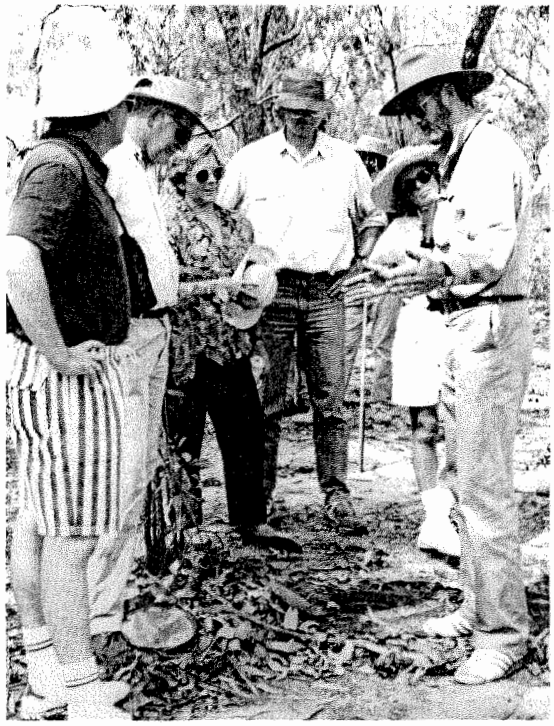
A graduate of the University of Tasmania, Dr Kile joined the Division in 1975 and has established an international reputation in forest pathology through his work on Australian forest diseases, including eucalypt diebacks, root rots, wilts and the consequences of thinning damage in regrowth eucalypts.

Dr Kile said the Division was well positioned to undertake the research needed to support sustainable forest management in Australia.

'Public debate has highlighted the need for new scientific knowledge for forest management and at the same time re-emphasised the economic importance of the industry,' he said.

Australia currently has a net trade deficit in forest products of $1.8 billion per annum, and Dr Kile said that there was great potential for improved forest productivity to contribute economic and environmental benefits.

He strongly believes that the Division of Forestry has much to offer on issues relevant to the national forest debate, including the productivity of plantations, regrowth forest management, resource protection, improvement of wood properties, reducing the costs of production and harvesting and promoting innovation in forest management.❖



Above, from left, Dr Ted Cain, Dr Tony Gregson, Professor Adrienne Clarke, Nigel Stokes and Kathryn Cain look on as Wildlife and Ecology scientist, Dr Laurie Corbett, explains how effective pitfall traps (seen at their feet) are for trapping predators such as lizards and snakes.

Board Members visit Kapalga in Kakadu

CSIRO Board members Professor Adrienne Clarke, Dr Tony Gregson and Nigel Stokes, along with Board Secretary Dr Ted Cain and his wife Kathryn, made a three-day visit to Kakadu National Park in mid-October.

In spite of 39 degrees Celsius heat and oppressive humidity the group climbed rocky escarpment outliers, navigated crocodile-infested waters and trekked along a transect at CSIRO's Kapalga Research Station, in Stage II of Kakadu.

They spent an afternoon at Kapalga, where they were taken on a tour of the research station and shown the Division of Wildlife and Ecology's lanscape-scale fire experiment. Research is focused on the short and long term ecological effects of different burning practices on the aquatic system, soils, plants, insects, small mammals, reptiles, birds and large predators.

The visit was brief, but the group was impressed by the importance of CSIRO's fire ecology research for the conservation management of Kakadu and other areas of the Top End.❖

Simmenauer wins optical award

The Australian Optical Society has chosen CSIRO optician Paul Simmenauer as its 'Young Optical Worker of the Year' for 1991.

Mr Simmenauer, 22, works with the Optical Systems Engineering group at the Division of Materials Science and Technology in Clayton, Victoria. He won the award partly for his work helping William James, of James Optics, in the manufacture of precision corner cubes for use with the Aussat B satellite, and partly for his high level of achievement during training.

Mr Simmenauer earned the 'Best Student on Course' award from the Swinburne College of TAFE when he graduated with his Associate Diploma of Applied Science (Laboratory Technology) earlier this year.

Radiotelescope celebrates its 30th birthday

In celebration of thirty years of operation, the CSIRO radiotelescope at Parkes held two open days over the recent October long weekend.

The site was open to the public from 9am till 4pm on October 6 and 7, and more than 2,000 people turned up.

One of the most popular attractions was a series of half-hour science shows by the project officer with the CSIRO Double Helix Science Club, Linda Meisel. These included demonstrations of CSIRO technology such as the'unbreakable' ceramic PSZ, the new $10 polymer note with its anti-forgery device and some fun with liquid nitrogen.

Also on offer was a 'ham' radio, set up next to the Parkes education and visitors' centre, a half-hour audiovisual —'The Invisible Universe' — in the theatre, and a historical display in the administration building, prepared by Helen Sim.

There were several talks by astonomers, including one on 'The Search for Extraterrestrial Intelligence', and the astronomers were also available for informal strolls — cups of tea provided — on the lawns.

The telescope itself was of course on display, again with astronomers on hand to explain its workings as it collected data on a selected patch of sky.

For the fit (and brave!) there was a further inspection of the telescope beyond the control room, up to the azimuth track and higher to the junction room, with a descent back to the control room via a helical staircase inside the building.

One special feature of the open days was a televised planting of an apple tree. The cutting used came from the time and garden of Sir Isaac Newton. In response to the inevitable question, 'What on earth has an apple tree got to do with the Parkes Radiotelescope?' Dr Ron Ekers, Director of the Australia Telescope, said, 'Gravity has everything to do with astro-nomy, and Newton was first inspired to work on gravity while sitting under an apple tree'.

Visitors were surveyed for their reactions to the open days, and clearly they were pleased. One small child wrote, 'The best part was going up the stairs to the control room, the worst part was having to come back down.'

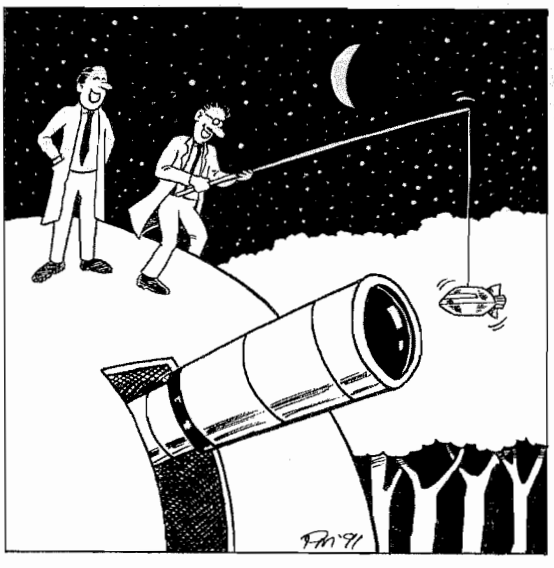
About 30 staff members, their families and others came to help out at the open days.

From Sydney came Drs Ron Ekers, Bob Duncan and Ron Stewart and their wives, Dr John Whiteoak, Robina Otrupcek, Michael Anderson, Ron Mercer and his son, Helen Sim, Alison Garside, and Dr Bobby Vaille (University of Western Sydney).

They supplemented the local staff and helpers — Dave and Margaret Cooke, Alan and Hilary Wright , Harry Fagg, John and Margaret Glowacki, Uwe Knop, Ben Lam, Sid Horner, Diane and David Scott, Andrew Hunt, Rick Twardy, Julia Hockings and Ian McGovern.

How it began ...

The 64-metre Parkes radiotelescope is one of Australia's, and indeed the world's, premier research instruments. Since October 31, 1961, the giant dish has been at the forefront of astonomy, conducting pioneering research into such fields as the structure of our galaxy, the discovery of quasars and the demystification of the enigmatic pulsars.



Above, Dr Ron Ekers, Director of the Australia Telescope National Facility, explains features of the control room to a group of visitors. Below, the braver souls among them climb to the telescope's azimuth track. Photos by Ben Longden, Parkes Champion Post.

The telescope originally came into being partly through good management and partly through good luck.

After the Second World War the USA was slow to take up the new field of radioastronomy. The Chief of the Division of Radiophysics, Dr E.G. Bowen, had many contacts in the scientific and industrial spheres there, and he urged them to make good their deficiency in radioastronomy, primarily by devleoping and constructing a large antenna.

The proposal fell on receptive ears.

The Division wrote a detailed specification for such an instrument, accompanied by a program of scientific activities that the telescope could pursue.

At that time the large American foundations such as Ford, Rockefeller and Carnegie were changing their emphasis from support for US science to assistance to development in other parts of the world. It was suggested that the large telescope proposed could be built in Australia, with financial assistance from the USA.

The Carnegie Corporation had accumulated $US250,000 that it was obliged, for certain reasons, to dispose of in the British Commonwealth, and it wasn't too long before the Corporation's trustees granted this money towards the contruction of a telescope in Australia. The Carnegie grant was followed by another $250,000 from the Rockefeller Foundation.

Our Government came to the party by matching the funds, a building contract was placed in 1959, and the telescope was completed in 1961.❖

(For the history, my thanks to ICON, the IISE newsletter.)

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CoResearch

No. 345 December 1991 CSIRO's staff newspaper

CSIRO AUSTRALIA

Oh boy, it's a girl! (At last!)

It may be mainly a symbolic triumph, but it is surely still a sort of triumph. For the first time there is a woman at the top, not just of any old national government body, but of the old national government body that looks after Australian science — that so, so male domain for so, so long.

Above, CSIRO's new Chairman, Professor Adrienne Clarke. Photograph by Alan Porritt.

Professor Adrienne Clarke has just been appointed Chairman of CSIRO, and one thing she certainly isn't, apart from male, is so-so.

She acquired her doctorate at the University of Melbourne, and is now Head of their School of Botany and Director of their Plant Cell Biology Research Centre.

In between, she did post-doctoral work at Baylor University, Houston, and the University of Michigan, in the United States.

She also did some teaching at the University of Aukland before being appointed to a personal Chair in Botany back at the University of Melbourne in 1985

Her research has been in the field of cellular recognition in plants, particularly in interactions controlling fertilisation and the spread of disease.

In 1991 her work was recognised by the conferring of an Officership in the General Division of the Order of Australia. She had already been made a Fellow of the Australian Academy of Technological Sciences and Engineering and of the Australian Academy of Science.

She was a part-time member of the erstwhile CSIRO Executive, and became a member of the new Board at its inception in 1986.

Ross Free, Minister for Science and Technology, announced her appointment to the Chair of CSIRO on December 11.

He called her a 'a highly capable spokesperson and leader'. 'Hers is the kind of career,' he said, 'that young Australian women can look up to and hope to emulate.'

Indeed. Clarke's new position is the highest formal office held by any woman in the Australian scientific community.

Rivers and rivals: did we hurt you, Darling?

Dr Clarke's first announcement as Chairman was that CSIRO would double its own funding of research into the prevention and cure of the toxic algal blooms plaguing Australia's Darling River, and beyond.

The increase will take CSIRO spending on the problem from $3 million to $6 million over the next three years.

The extra funding will come from the $5 million central funding pool fed by the annual 1.5% levy recently imposed under the National Priorities exercise.

Professor Clarke said that CSIRO had first seen the warning signs of the algal outbreak in the mid-1970s.

'For the past couple of years,' she said, 'we have been stepping up the work.'

The extra funding will go to the Division of Water Resources, the Division of Fisheries, and the Centre for Environmental Mechanics.

One project is looking at preventing blooms by controlling the flow of water through rivers. Algae bloom in warm, still water with lots of nutrients, and the scientists want to know the minimum flow of water needed to prevent the bloom.

CSIRO scientists are also searching for new, safe algicides that can be used to kill off blooms once they have started. The only acceptable algicides now in use are copper-based products, which attack everything — good as well as bad algae, and all other animal life in the water, including the fish — indiscriminately.

The algicides also release smells and poisons from the algae, so the researchers are after natural bacteria that can break these down. They are also looking into how the algae produce their poisons, for a key to why some blooms are more poisonous than others.

Two different projects are tracing where the nutrients in the rivers come from. One project, in Griffith, is using organic compounds produced in the animal gut as 'biomarkers' to trace effluent sources. Another project, in Canberra, is using isotopes of oxygen and sulphur — 'chemical fingerprints' — in superphosphates to trace the origin of the nutrients.

Professor Clarke said we know that the nutrients causing the algal blooms are coming from sewage discharges and agricultural practices such as fertiliser use.

'In a country as dry as Australia,' she said, 'with our poor soils, disposing of the nutrient-rich sewage waste should not be a problem. CSIRO is already developing ways of using sewage to water and fertilise agricultural land and tree plantations.

More new blood

The CSIRO Board has not only a new Chairman but three other new members. They are Professor John de Laeter , Dr Maxwell Richards and Mr Douglas Shears.

Professor de Laeter is a physicist, presently Deputy Vice-Chancellor and Dean of Graduate Studies at Curtin University of Technology in Perth. He was Citizen of the Year for Western Australia in 1986.

Dr Richards, a geologist, is Managing Director of Aberfoyle Ltd. He is Treasurer and Past President of the Australian Mineral Industries Research Association and a member of the Executive Committee of the Australian Mining Industry Council.

Mr Shears is an eminent agribusinessman at the head of ICM Australia. ICM began as a small oat-milling company and quickly became the country's biggest privately owned integrated agribusiness enterprise.

Sir Gustav Nossal, one of Australia's best known and most honoured scientists, and a member of the CSIRO Board since its inception, has been reappointed for a further two-year term.❖

A season for endings and beginnings

The very nicest thing you can say about people when they leave an organisation is that they are leaving it better than they found it. As Neville Wran steps down from the Chair of CSIRO, there is little doubt that this is the case. History, I think, will be unequivocal in its judgement.

The vision he showed in reshaping the Organisation, accepting the ASTEC report and taking us through the McKinsey exercise has left us ready to meet the approaching decades with a steadier gaze, and grip.

The new structure makes it possible for us to focus on external delivery of CSIRO's discoveries and conclusions in a way we just weren't able to before. I think it was a great tribute to Neville Wran and to the Board that they were able to see that structural deficiency and fix it.

The 'leaner, greener machine' that Neville described in his Milthorpe lecture is able to respond to national issues for the benefit of all Australians.

On the personal level, Neville Wran has been an unusually supportive and pleasant chairman to work with — non-intrusive, but always available to consult on problems and issues, an extremely valued collaborator.

He was, I think, exactly the right man for the job. Witty and articulate, he would break us up with some anecdote from his fascinating past whenever our Board meetings began to get a bit dull or stodgy. We're all going to miss those moments of sudden lightness, and, though it's a tradition we'll try to continue, it isn't going to be easy to match his one-liners.

And although it doesn't perhaps lend itself to print in this carefully perused column, I'd be pleased to pass on, to anyone who wishes, Mr Wran's account of how to arrange a press visit to the Australia Telescope!

Neville insisted that the Organisation develop a human resources plan, and he promoted us actively as an organisation making a commitment to its people. That support and promotion has provided us with a new performance contract that helps define and guide the work of everyone in the Organisation.

Speaking of the Human Resources Plan, it seems already to have had several positive consequences. I've noticed a number of people under the PPE discussions beginning to think about career opportunities in a way they certainly wouldn't have before.

I also notice an increase in networking among staff who have similar skills and roles but are rather isolated from each other — for example, librarians, photographers, communicators, and, most recently, personal assistants

Conferences and meetings of these groups have taken place recently, and I have had the chance to see at first hand the benefits of such occasions. There was a time in CSIRO when meetings of any more than three like-minded people might have been regarded as a conspiracy, and very dangerous indeed. But now, with our more open structure, not only can we accommodate such meetings, but the talk is likely to be very positive, with much about what we can actually contribute — how we can improve our own delivery of results within the Organisation.

I know I thoroughly enjoyed my part in the recent Personal Assistant's Workshop, and I gathered some interesting and valuable insights from talking to the people who attended.

The new Board members bring a wealth of personal experience that is very relevant for CSIRO's future direction.

The new Chairman (and she wants to be called such!) is someone who has not only distinguished herself in academic life, but has taken a keen interest in the natural environment and also formed very strong links with business. She understands the issues involved in the extraordinarily complex business of commercialising research and development, and I look forward keenly to working closely with her.

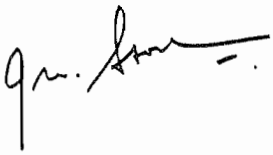
Doug Shears is someone who has contributed enormously to the food industry through his own activities. That industry is an important CSIRO stakeholder, and an area of Australia's trade and commerce that absolutely must perform better if we're to reverse our balance of payments deficit. It's been earmarked for many years as an area where we ought to be doing much better than we are. CSIRO will certainly have to be a part of any major plans for the food industry, so his experience in this respect will be a great asset.

Max Richards, as Chairman of the Australian Mining Industry Council and Treasurer and Past President of the Australian Mineral Industries Research Association, is another who is ideally equipped to help us in our thinking about industry links and external delivery of results.

John de Laeter is an old friend of CSIRO who brings unique insights from his distinguished academic background and his record of bridging the gap between universities and industry.

With this great team of Board Members, I look forward to the New Year keenly.

I wish all *CoResearch* readers a happy and relaxing Christmas break and a year of great achievement in 1992!



Letters to the Editor

Dear Editor,
Is the Division of Wool Technology (Ryde) 'branching out' into other areas of research?

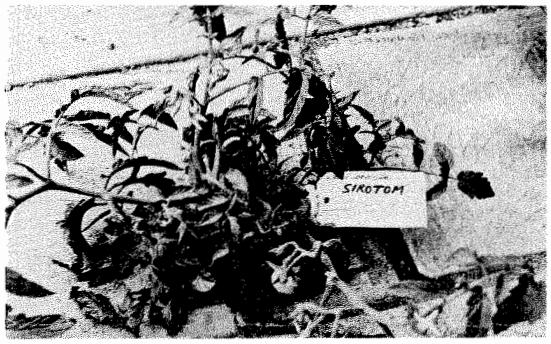
A hardy plant species suddenly appeared in a crack, in the middle of a mini cement jungle, only 20 metres from a busy carbon-monoxide-polluted Ryde main road.

An anonymous enterprising entrepreneur grabbed the chance and labelled it thus:

CSIRO DEVELOPED
SIROTOM
Grows anywhere, suitable for cracks and crevices
Patent pending

In line with cost-cutting measures throughout the Division, the tomato crop will be harvested in time for the staff Christmas party. This exercise will yield a saving of around 0.003 per cent of the estimated party budget!

Ros. Raison
Division of Wool Technology



Cotton on CSIRO!

Dear Editor,
I was very pleased to receive and proud to wear a CSIRO windcheater provided to me for my role as a parking marshall for the VIP Open Day at Mineral and Process Engineering.

However, at the same time I was disappointed as I noted the garment was of inferior quality and the manufacturer's label advised the garment was 'Made in China'.

How much more satisfying it would have been for me to be wearing a high-quality garment 'Made in Australia' from the finest cotton grown in Australia, developed and produced with the research support of the CSIRO Division of Plant Industry's Cotton Research Unit at Narrabri and manufactured in Australia, by an Australian manufacturer, using the latest manufacturing processes developed and implemented by the CSIRO Division of Manufacturing Technology.

If that was the case, I would have been even prouder to be displaying our Logo and Image to our clients and the public.

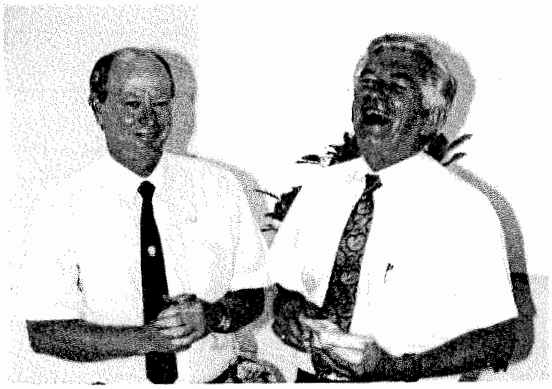
Come on CSIRO, strut your stuff!

Phil Tyler
Division of Mineral and Process Engineering

Merry Christmas to all my fellow staff in CSIRO, and thank you for the abundant material and ideas for CoResearch during the year. I'm going away now, so there won't be another edition until February, as usual. Until then, have a great holiday.

Liz MacKay, CoResearch Editor

Rockhampton gets Beef Cattle Centre



Staff at the Rockhampton Division of Tropical Animal Production were relieved and delighted when Science Minister Ross Free announced on Friday November 29 that the Rockhampton Beef Cattle Research and Extension Centre was to go ahead. It wasn't a complete surprise to them, as the Review of Tropical Animal Production Research in CSIRO has been going on since June, and the Centre was one of the hoped-for outcomes.

They were surprised, however, when Bob Hawke dropped in unexpectedly on the following Wednesday to congratulate them and look around. So surprised, in fact, that the most senior members of staff were all missing.

Dr Bob Hunter and Dr John Frisch took charge. Neither is very used to ambassadorial functions — Dr Hunter works in growth research and Dr Frisch in cross-breeding — but by all accounts they carried the thing off beautifully. The Prime Minister was suitably impressed, and even entertained. As a memento of the visit, Dr Hunter presented him with a pair of CSIRO's very own logo-adorned golf balls.

'I suppose,' Mr Hawke joked, 'they go 20 metres further?'

'Of course,' Dr Hunter replied quickly, 'and on the offchance that you hit one into the rough, they're bio-degradable.'

The photograph above captures Mr Hawke's response.

The new Centre will enhance Rockhampton's 'Beef Capital' status. In fact, local member Mr Wright said Rockhampton would now become the 'Beef Capital of the Southern Hemisphere.'

Be that as it may, the number of CSIRO staff at Rockhampton looks certain to increase. Acting Officer-in-Charge Dr Derek Lindsay said he could foresee an increase from 45 to 75 or 80 within five years.

When fully operational, the Centre will have a staff of more than 100.

They will include people from the Queensland Department of Primary Industries and the University College of Central Queensland as well as CSIRO.

Apart from the funding coming from these three participants, there will be an extra $1 million a year of Federal funding for the project.

The decision to establish the Centre was great news for CSIRO staff, as rumours of possible changes had been eroding morale.

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Top-down restructure brings leaner, meaner look to Wide Brown Land

CSIRO has just released its findings on how the greenhouse effect is likely to change Australia in the next 40 years.

By the year 2030 we should have warmer weather all over the continent, by a degree or two.

With the warmer air increasing evaporation, we should also be a little dryer overall, though summer rainfall looks like increasing over most of northern Australia, bringing more floods.

We appear to be in for more hot days and dry spells, but fewer frosts, and cyclones should begin to make their way further south.

On the whole, a more dramatic weather environment than we've had in the past, with both our 'droughts and flooding rains' increasing.

Our 'far horizons', on the other hand, may actually be closing in on us a little as sea levels rise by an estimated 20 centimetres.

The CSIRO estimates were prepared by the Climate Change Impact Group at the Division of Atmospheric Research. A more detailed assessment is available on request: call either Peter Whetton (03 586 7535) or Paul Holper (03 586 7661).❖

Chairman's Medal goes to Peter Room

Dr Peter Room of the CSIRO Division of Entomology has taken out the inaugural Chairman's Medal for his work on the biological control of salvinia.

Salvinia, a floating fern from South America, has been called the world's worst water weed.

It forms mats up to a metre thick, completely blanketing water surfaces, destroying plant and fish life, devastating the environment and causing considerable suffering to humans.

Dr Room and his colleagues have been trying to eradicate the pest by means of its natural enemies.

Together they have unravelled interactions between climate, nutrients, salvinia and insects, to come up with one of the most successful programs of biological control ever undertaken.

The techniques they evolved have been applied successfully around the world to clear salvinia plagues — from eastern Australian rivers and lakes, from 200 square kilometres of lakes in Papua New Guinea, and from hundreds of water bodies in Sri Lanka.

Although Dr Room was awarded the Medal as an individual, he will be sharing the $25,000 with the other members of his team. He said there was no individual piece of research that stood out as brilliant; rather it was very much a case of the whole being greater than the sum of the parts.

There was just too much information these days, he said, for one person to be master of it all in one lifetime.

He also said we had fallen under the ancient Chinese curse — 'May you live in interesting times'.

We were indeed living in interesting times, he said, in that we were crossing over into unsustainability, where research had become essential to the world's survival.

He wanted to name the other members of the team — Dr Ken Harley; Dr Don Sands; Dr Wendy Forno; Mr Mic Julien; Mr John Whiteman; Mr Richard Chan; and Mrs Tini Schotz.

The new Chairman's Medal with its large cash prize was of course the star turn at the CSIRO Medals Ceremony, which was held on November 27 at the Rialto Theatrette in Melbourne, but there were also the usual four CSIRO Medals for the year.

One Medal is presented each year to someone outside the Organisation, and this year it went to Professor Graham Farquhar of the Research School of Biological Sciences at the Australian National University.

Professor Farquhar was given the Medal for his research in plant physiology and its application to agriculture.

The first of the three internal Medals was presented to the Viticulture Group of the Division of Horticulture — Dr John Possingham, Mr Peter Clingeleffer, Mr George Kerridge and Mr Max Sauer — for their development of new technologies for the mechanisation of Australian viticulture.

They have made it possible to produce robust, high-yielding grapevines that can be both pruned and harvested mechanically.

Another of the CSIRO Medals went to Dr Robin Hill, leader of the Ore Genesis Group at the Division of Exploration Geoscience, for nickel exploration research.

Dr Hill developed a model of how mineral deposits form that overturned previous misleading models, and produced major payoffs for supporting companies.

Mr Bill Trahar of the Division of Mineral and Process Engineering was awarded a CSIRO Medal for his developments in the flotation method of mineral separation.

His work in two areas — the chemistry of sulphide flotation and the effects of mineral particle size in flotation — is a triumph of mineral processing research.

Mr Trahar was also awarded the Ian Wark Medal on October 31 this year and the A.M. Gaudin Award last year.

Mr Trahar's work has stimulated research in leading laboratories throughout the world.❖

Above, left, Dr Peter Room of the CSIRO Division of Entomology holds up his Certificate, while retiring CSIRO Chairman the Hon Neville Wran AC QC, right, holds the solid gold Chairman's Medal. The photo was taken by Mark Fergus of the Division of Materials Science and Technology in Clayton.

Wran bids world read its palm and pine

Neville Wran, influential politician and vocal friend of the environment, and our Chairman for the past five years, now takes leave of CSIRO for once and for all. CoResearch thought it a good time to ask what he thought of us and our relationship to life, the universe and everything. Is it all our fault, and if not, what can we do to change that situation?

Liz MacKay: What do you think has been the most significant change to CSIRO during your time as Chairman?

NevilleWran: My answer may surprise you. It's not any great scientific achievement, nor is it even the extensive structural changes we've been through. The biggest change as far as I'm concerned has been an attitudinal change — a change in the ésprit de corps of the whole Organisation.

When I first became the Chairman, I heard nothing, from any quarter, other than that morale was low, morale was poor, morale was bumping along the bottom. Now morale is high, and science stands higher on the national agenda than probably at any time in Australia's history.

I hasten to add that I don't take the credit for that: I've never in my life been associated with a Board that measured up to the CSIRO Board. Its members together represented an extraordinary pool of intellectual capacity, and each one of them exerted that capacity to the full.

There was plenty of lively disagreement, but when a decision was made, it was accepted, and there was no sulking. It was that sort of Board — everyone seemed to be big enough to take a loss, and front up to the next round.

And that was terribly important in building up morale. When that Board was first constituted in 1986, CSIRO had gritted its teeth through the jerking, cutting and stitching of more reviews than Zsa Zsa Gabor had facelifts, and I think the people in the Organisation were just about exhausted.

We took them through two more reviews, the McKinsey Review and the Papas Carter Evans Review, and since then we've striven to bring certainty to the Organisation.

During the five-year period the Organisation as a whole has helped to increase the official recognition of the importance of science. CSIRO contributed to the establishment of the Prime Minister's Science Council and the Co-operative Research Centres. Barry Jones when he was Minister established the Australia Prize. In other words, during these five years, however it happened — and no one person can take the credit for it — there has been a turnaround in the status of science and scientists.

So those are the two that stand out to me as the most significant — and important — changes: morale, and where science stands on the national agenda.

LM: What role do you feel you've played in this change?

NW: Well, I was the first Chairman of CSIRO who was not a scientist of any sort, and there was some fuss about that at the time.

But I think that specific lack of knowledge actually made me a better Chairman, oddly enough. I was unprejudiced and unencumbered.

Not being a scientist meant I was immune to the debilitating pessimism that seemed to seize and dominate the minds of so many, not only in CSIRO but in science generally in Australia.

I certainly don't think that CSIRO should always have a non-scientific Chairman, but I think at that time it was probably an accidental master-stroke to have a non-scientist there, someone who wasn't weighed down with the history and cultural mores of CSIRO.

LM: What influence would you say John Stocker has had on the organisation?

NW: In a word, notable. The Board has accomplished quite a bit in the last five years, but I think the fullness of time will show that John Stocker's appointment was one of the best things we ever did.

Of course he was brilliant academically, but he also brought the fire-hardened realism of someone who's been running a successful medical research organisation that actually brings products to the market. He's a tireless worker, and he really believes that the Chief Executive of CSIRO is doing a job more important than that of the Prime Minister of Australia. Now, if you believe that, the enthusiasm it engenders can only be good for CSIRO.

LM: What role do you see CSIRO playing in Australia's development?

NW: CSIRO has always played an important role in national development, but I see that importance increasing beyond anything we have seen so far.

This period of micro-economic reform through which we're moving is going to have profound effects on the structure of industry in Australia, and soon CSIRO will have a staggering contribution to make to our national future.

The Organisation has now established its list of priorities, and, in a sense, these will become the nation's priorities.

Let me give you one illustration: the first and biggest steps towards a magnesium metal industry for Australia have just been taken with the recent announcement, by Ross Free and Wayne Goss, that the Commonwealth and Queensland Governments have committed $25 million towards a program of research into the production of magnesium metal from the high-quality deposit north of Rockhampton.

Now this is totally in accord with CSIRO's list of priorities. We must add value to the minerals we're taking out of the ground. Otherwise we continue to be just a handy quarry for the rest of world, without Australians getting the benefit of their minerals.

This magnesium development is an example of the way Australia will have to go if it is to recapture and hold the high standard of living we've enjoyed in this country.

LM: On a larger level again, do you think Australian science has a part to play globally?

NW: Without doubt. And it is playing a role globally. Again, let me answer by way of example. While it's a pity that the Gene Shears research is now partly owned by French and partly by American interests, in another sense it's illustrative of the global nature of science that three different, disparate organisations can work together on things such as plant disease, Alzheimer's disease, flu virus and so on, and if any one of them breaks through in a particular field the impact will be felt by the world.

The results of science can't be locked up in any one country. And Gene Shears is a classical example, I think, of Australian science going out to the world, albeit by an unfortunate route.

LM: You yourself are known to consider environmental research to be of the highest priority. Do you think that CSIRO should have an agreed position on this research?

NW: No. I do not. CSIRO must never forget its real purpose, its raison d'être, and that is to practice excellent science. In the field of environmental research we should be encouraging the lively intellectual diversity essential to scientific enquiry.

We shouldn't start off environmental research with an agreed brief. Whatever the research turns up is CSIRO's position.

Otherwise we'll become the prisoner of interest groups in the community — and there are plenty of them — rather than the purveyors of good science.

For instance, this very day, in the midst of the fierce public debate over the blue-green algae in the Darling River, a CSIRO scientist has said that the use of a certain substance to dispel the algae is as harmful as the algae itself, because it causes the algae to release toxic materials that attack the health of livestock.

I think that's a perfectly proper role for CSIRO to play, and I applaud it.

Certainly it's embarrassing when CSIRO speaks with two voices. I recollect that we spoke with two voices in respect of the pulp mill in Tasmania. But far better speak with two voices and maintain your scientific objectivity than compromise your objectivity for the sake of saying 'well, after we've all made concessions, this is the result.'

That's what the people who do environmental impact statements do. That's not what scientists ought to do.

I'm not encouraging differences of view, mark you, but if they're there, you've got to live with it.

LM: Environmental research is now at the top of CSIRO's national research priorities, but so is mining. Have you any comment to make on that?

NW: Sure. What that position demonstrates is the inter-dependence of development and the environment.

The environment, until recent years, used to be thrown in as an add-on, in relation to the all-important goal of development. Now the careful assessment of the likely environmental consequences, and a procedure to deal with those that are adverse, is an integral part of development.

In other words, there is an inter-dependence between development and the environment that is here to stay.

The environmental questions cannot be disregarded any longer.

But I think we can get into a false mould by being *anti*-mining, or *anti*-development. That's not the real issue. What we really need to do is much more difficult, and that's to find a reconciliation of our *need* to mine and our *need* to develop with our *need* to have fresh air, clean water and pure soils.

LM: On a different tack, is CSIRO's role as 'honest broker' endangered by the requirement by Government that we find one-third of our funding from outside sources?

NW: No. CSIRO's role can never be endangered if it sticks to the basic precept that its task is to practise good science, because good science doesn't allow for imbalance or prejudicial conclusions. The logic of research demands an objective answer, and if there were any perceived imbalance, or prejudice, in our research findings, then the very strength of CSIRO — its independence from the desires of any group — would be lost.

LM: From your five years with CSIRO, can you offer us any prophecies on Australian science or world science? What should science be doing to save the planet?

NW: The greenhouse effect, the damage to the ozone layer, the non-disposal of toxic wastes — all those new man-made menaces that now affect the air, the water and the soil, and therefore everything — aren't going to go away. They'll stay around, and grow. Increasingly, they will become the dominant concerns for science and scientists as world population grows.

If, as is predicted, world population doubles by the year 2020 — some say 2030 — then it's the scientists who will need to say where the energy will come from to sustain that doubling of population, where the food will come from to sustain that doubling of population, and most of all, the way in which the planet itself can sustain that doubling of population without the total erosion of the very elements that make life possible — water, air and soil.

In other words, as the world's population mindlessly grows, the scientists will be in the front line of devising techniques for survival.

LM: With Communism dying, leaving its gentler relatives to some degree discredited by past association, with economic rationalism and yuppyism everywhere triumphant, the environment seems to some to be under greater threat than ever from development. Can CSIRO, or Australian science, do anything about that?

NW: Well, we can certainly do something in our sphere of influence, and that I see mainly as the educational sphere. Of course scientists will produce results that will have impact, but it's absolutely critical that the community, and hence the politicians, understand what problems are being created through the destruction of the environment, and how those problems can be solved or their worst effects arrested.

Offerings from CSIRO such as the Double Helix Club, the education centres, input into popular shows such as Quantum and Beyond 2000, not to mention A Country Practice, and CSIRO's involvement in a host of conferences, seminars, and publications, all of these provide an ongoing and critical source of information necessary to an educational process. The more we laymen know the more likely we are to appreciate the chances of survival that we have and, perhaps more importantly, the chances of non-survival if we don't listen to what we're being told.

So I believe that CSIRO will continue to play a literally vital role in our own region, and in a global sense that role is even more vital, though relatively smaller.

I'll take just one illustration — the greenhouse effect. CSIRO is at the cutting edge of research into greenhouse, probably more advanced than any other country in the world, and we're not locking up our information; it's there for the world. We're making an important contribution to world knowledge, and therefore probably to world survival. Even, perhaps, to the survival of the world.

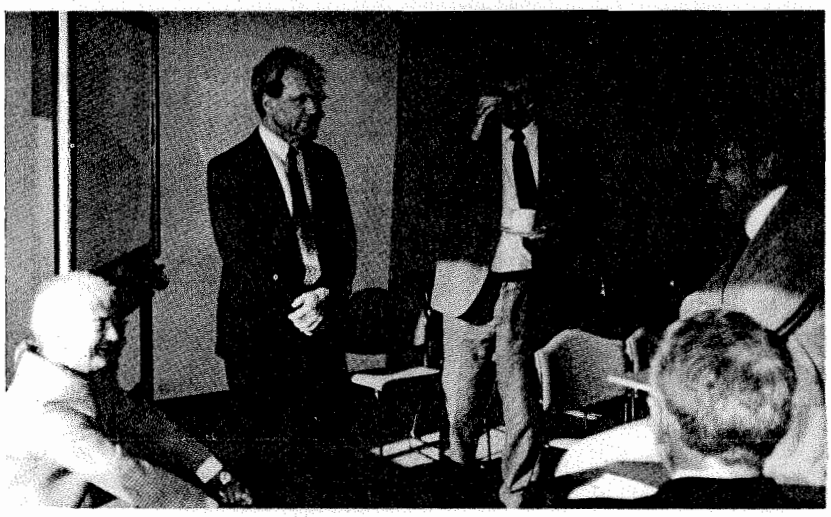
LM: So an objective input from science about dangers to the environment could help to moderate or stem what seems to some to be an alarming shift to the right in a lot of areas of the world, a shift that would normally be inimical to the environment, in that it favours industry?

NW: No question. No question. I have much more faith in the power of people than most former politicians, and I take the view that if you can mobilise and educate the population, then you'll get pressure put upon the politicians. People, to politicians, represent votes, and if the voters are expressing views about scientific matters, and expressing views supportive of CSIRO, then the politicians will listen.❖

CSIRO's College of Chiefs meets

Yes, we know, but why does it?

CSIRO has always had Chiefs, and the Chiefs have always had meetings. After all, it was always that sort of organisation. Divisions were where the real science was, and the Chiefs were in charge of the various branches of that real science. They were the movers and shakers, not those un-scienced bureaucrats at Headquarters. But wasn't that all a bit fuedal, and aren't times supposed to have changed now? Aren't we all supposed to be much more co-operative and corporate-minded? What function does a College of Chiefs now serve, as opposed to a corporate committee? To explain what the College is, and does, three Chiefs — Tom Biegler, John O'Callaghan and Max Whitten — have written this piece for CoResearch readers ...



Above, some early arrivals at the Chiefs' meeting on the day of the CSIRO Medals Award Ceremony (see story page 3). The head in the foreground is that of Dr Tom Spurling, Chief of the Division of Chemicals and Polymers. The others are, left to right, Dr Brian Tucker, Chief of Atmospheric Research; Dr Graeme Pearman, Acting Chief of that Division while Dr Tucker is acting for Dr Roy Green as Director of the Institute of Natural Resources and Environment; Dr Mike Murray, Chief of Materials Science and Technology; and Dr Colin Adam, Director of the Institute of Industrial Technologies. (This being the second meeting for the year, it included some non-Chiefs: see below.)

For many years, Chiefs of Division have been gathering at various intervals, usually twice a year, for meetings of what has come to be known as the 'College of Chiefs'. The role of the College has been a recurrent theme in discussions at these meetings. This note outlines why we meet and what we do.

The College of Chiefs is an unincorporated body without rules or constitution. It continues to meet, not through the driving force of such prescribed requirements but because its members get value from the event. There is a strongly shared view that the meetings help to produce and to reinforce a common vision for CSIRO and to give a feeling of corporate unity within the Organisation. We discuss matters relating to our roles and responsibilities, we help each other to address issues of common concern, we share experiences and we get to know each other. Indeed, there is no other mechanism by which the Organisation's 32 Chiefs can get together. The gathering also provides a forum for the Chief Executive, the Minister and other top decision makers to meet with key line managers and discuss corporate matters.

All of this adds up to a conviction amongst the Chiefs that these meetings continue to have a legitimate role and a beneficial influence. Attendance is always given a high priority by individual Chiefs. Important topics that have drawn the Chiefs together over the years have included a shared vision for the future of CSIRO, the management and structure, the impact of external funding on strategic research and, more recently, award restructuring and its ramifications. The Organisation and its staff benefit from a more corporate approach to management and policy matters.

The current pattern is to have one meeting in mid-year and then one later in the year involving the Chief Executive and other representatives of the Organisation. At the latter meeting the College elects a Chairman and a Sub-Committee. The Chairman, supported by the Sub-Committee, organises the meetings and communicates the views of the College to the Chief Executive.

The College of Chiefs is not part of CSIRO's line management structure, and does not seek to bypass the formal lines of management. It is as a forum for the exchange of ideas and experience that it makes sense, even excels. The College of Chiefs is a very positive force in the unity and strength of the CSIRO.❖

Open Days, open minds, and open slather?

It's the age of television all right. David Mussared of the Public Affairs Unit went to Melbourne for the Clayton site Open Day on Novermber 21. He was supposed to write a story on it for CoResearch. He saw all the displays, and he saw the Minister, but the whole thing seems to have got swamped by the television shows he watched before he went ...

CSIRO scored an unusual double in the last week of November — it appeared on two television soap operas in the space of three days.

First there was A Country Practice, when a cold and crusty female geneticist from CSIRO appeared on the Monday night as a new character in Wandin Valley.

Things went very badly for CSIRO that night. The farmers of Wandin Valley started losing masses of stock to a mysterious ailment, most of the regular characters came down with a strange illness and it was all blamed on something sinister going on at the CSIRO lab.

By the end of the Monday episode the scientist was confronted with a pile of dead sheep dumped on CSIRO's doorstep ('You killed them, you bury them', said a placard), and a town meeting which erupted into an angry brawl.

On Tuesday things got a bit better. The aloof CSIRO scientist came out of her shell — she was confronted with the suffering of a particularly hard-luck farmer who made her remember why she had studied science in the first place — and she started helping the Wandin Valley residents find out what was killing the sheep.

And guess what it was? Blue green algae were blooming in the various dams and waterways of Wandin Valley. How's that for prophetic? The Darling River bloom did not hit the headlines until the following week.

In its second soapie appearance CSIRO did not play quite such a starring role. The Division of Mineral & Process Engineering at Clayton was understandably dubious when it received a call from the makers of the program Chances.

The request was for CSIRO to provide a laboratory for an upcoming episode. The laboratory, the Chances people insisted, must have something to do with minerals research and must be 'big enough to fit a film crew and a couple'.

Given the reputation of Chances as an 'adult' soapie, it says much for the Division's open-mindedness that it agreed.

So after two days of CSIRO-soap on A Country Practice, Wednesday night saw the broadcast of a dramatic scene from Chances filmed in a CSIRO lab.

The next day Federal Science Minister Ross Free turned up at a 'VIP Open Day' at the same site to open Clayton's Co-operative Research Centre — the G.K. Williams CRC for Extractive Metallurgy.

The Division's chief, Dr Robert La Nauze, referred at the opening ceremony to the previous night's television appearance.

'You'll have to tell me whether you watched it,' he said to Mr Free.

But Mr Free, sad to say, had not.

'I'm sorry that I didn't see that soapie this week,' he said. 'I hope it leads to a series — and you can give external funding a whole new meaning.'

The G.K. Williams centre — a joint effort by the Division, the University of Melbourne's Department of Chemical Engineering and the Australian Mineral Industries Research Association (AMIRA) — was duly opened before a crowd of some 300 people from industry, academia and CSIRO

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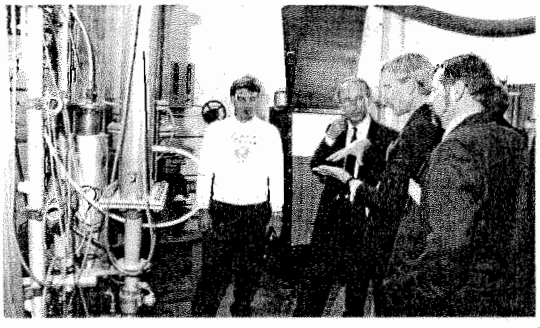
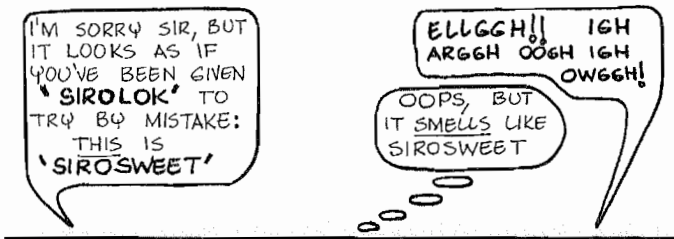
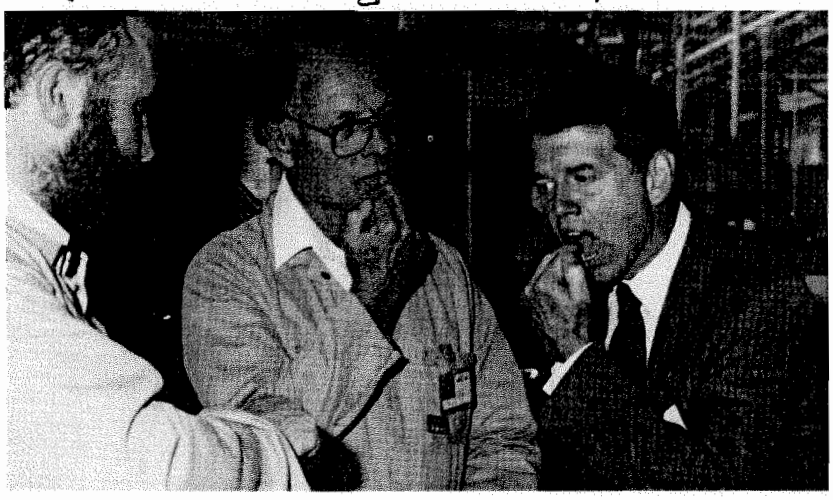


Above, CSIRO staff explain scientific equipment (fluidised bed) to Science Minister Ross Free during his visit to the Clayton site on its VIP Open Day last month. Left to right, Mr Ross Close, Mr Ross Free, Dr Rod Dry and Dr Rob La Nauze (Chief of the Division of Mineral and Process Engineering).

Caption Competition





'SIROLOK' IS A REVOLUTIONARY DIET ADDITIVE. A JAW SPECIFIC MUSCLE IMMOBILISER, IT CONTROLS WEIGHT BY PREVENTING THE SWALLOWING OF FOOD FOR 24 HOURS.

The Caption Competition continues to grow in popularity, to the extent that only a small proportion of the entries are now being published in each edition. I could almost put out a monthly magazine called CoResearch Caption Competition. (Perhaps I should put it in my PPE?) Anyway the point of saying that is to apologise to those of you whose captions are missing out. Also, since Geoff Roberts' inspired effort in the last issue, many readers have been sending entries in that format, i.e. a copy of the photo with speech and thought balloons drawn in. Unfortunately, it's virtually impossible to use more than one in that style, and printing the contents of the balloon without the picture often spoils the joke, especially since it requires a lot of extra verbiage from me to explain it. I need more brilliant one-liners! Having said that however, I had to give first place to Geoff again this time, and his complex and difficult to reproduce, but again, very funny entry appears above. It was just about a draw, though, and I still have my doubts about whether I shouldn't have given it to Lynn Pulford of Science and Careers Education here in Canberra. Her single balloon issued from the mouth of Mr Stephen Sykes (left), and contained the words 'After we're finished with the lip gloss we can apply some eye shadow.' As always, Lynn's entry was not only very funny but totally unlike anyone else's. Dr R.C. Chatelier, Division of Chemicals and Polymers, submitted the rather neat and topical 'It hurts right here when I try to swallow the efficiency dividend.' Karl Armstrong, Division of Building, Construction and Engineering, had Dr Don Casimir (centre) thinking 'Hmm ... He doesn't speak with forked tongue ...' Graham Pearce of Wildlife and Ecology had Dr Stocker say 'This blend of scientific cleverness, external funding and improved public image has the sweet taste of success.' I'm still hard-pressed for good photographs, but let's see what the one below brings forth ...

Matter of Opinion

The world's bureaucracies — including CSIRO — have enthusiastically adopted personal computers. The new technology has certainly brought us some impressive improvements in ability, but has our delight in these powerful new toys made us over-eager to please the commercial Santa Clauses who provide them? Are we guilty of computer cringe? Dr Graeme Caughley, Chief Research Scientist with the Division of Wildlife and Ecology in Canberra, says we are, and it's high time we made ourselves more independent.

The latest Policy Circular on 'Computer Software Use' (91/7 of 10 July 1991) reaffirms the message of the previous one on the same subject (88/10 of 30 June 1988) and warns that 'all proprietary software used on CSIRO-owned or controlled computers must be appropriately licensed and used in accordance with the conditions of the relevant software licence.'

Policy Circular 88/10 announced (Point 4) that 'most software companies are now providing demonstration versions of their software for evaluation. These should always be used for evaluation, rather than copies of someone else's complete version.'

I suggest that the interests of CSIRO and the interests of software companies are not entirely compatible. Whereas the CSIRO policy statements may be adequate for Pontius Pilate purposes they are not an adequate guide to buying and using software.

We of CSIRO need not be submissive towards software companies. They need us more than we need them.

CSIRO appears never to have recognised its considerable market leverage, which can be exercised on our own behalf or on behalf of less powerful software users. We can cause finite distress to software companies who care to cut up rough.

Let me explain.

The Gungahlin laboratory of my Division shares 173 PCs among a staff of 150 people. That staff includes gardeners and cleaners who seldom use PCs in the course of their work.

I subjected these figures to the mark-recapture analysis originally used by Laplace in 1986 to estimate the population of France. It yielded an estimate of about 8,300 PC computers in CSIRO.

A quick check on unit costs suggested that those PCs have a replacement value of about $30 million and are carrying software worth about $20 million.

In the world of PC users we are not small beer.

The policy circulars urge us to abide by the conditions of the software licence. The CSIRO publication NEWSystems (91/16, 25 September 1991, page 4) instructs us to seek clarification from 'the company involved' if we do not understand our licensed obligations.

The licence is the thing you are deemed by the software company and the Corporate Centre to have accepted when you opened the packet ('By opening the sealed disk package, you are agreeing to become bound by the terms of this Agreement ... ').

This I doubt. The laying-on of hands and the breaking of the sacred thread may have a theological basis but surely it has scant legal sanction.

Now look at what you have apparently agreed to. For illustration I consider only the 'Microsoft Hardware and Software Licence Agreement' specific to 'Australia, New Zealand, and Papua New Guinea.' It is fairly typical.

The print is very small and the wording somewhat ambiguous, but it would seem that you have transgressed the putative 'agreement' if the software is used in a machine containing a co-processor or in a portable carried between locations.

You are certainly in breach if you loaded the software into your notebook PC by LapLink cable, which is hard luck for those of you who have models lacking a floppy disk drive. You may not use such machines in CSIRO. Tough.

Because of the inbuilt ambiguity you may, through no fault of your own, find yourself in dispute with the company. CSIRO in its corporate manifestation has made it clear that it will have nothing to do with this dispute: 'Staff who knowingly breach the rights of copyright owners and thereby expose CSIRO to possible legal action may be guilty of misconduct for the purposes of CSIRO's Terms and Conditions of Employment' (Policy Circular 91/7). You are on your own, kid.

The licence continues: 'This Agreement (i.e. the one specific to Australia, New Zealand and Papua New Guinea) is governed by the laws of the State of Washington and shall benefit Microsoft Corporation, its successors and assigns. Licensee consents to jurisdiction in the state and federal courts located in the state of Washington.' Try to stall them long enough to qualify for an Apex fare.

Surely I need not labour the point. Such 'licence agreements' are outrageous and absurd. They should not be countenanced by CSIRO for one second. They represent an asking price and reflect accurately the considerable disparity between what is good for users of software and what is good for the producers.

For example, users seek standardisation of key-stroke commands across packages. Software companies seek maximum diversity of command meanings, suing the diodes off any competitor who converges on their command list; likewise with the appearance and layout of graphical interfaces. Standardisation of these would enhance productivity of users immeasurably, but each company actively seeks to limit standardisation so that it can monopolise a niche in the market.

As a generalisation, software companies will seek to minimise portability and maximise exclusivity of use of their software. Users will seek to achieve the opposite.

In my view a big user like CSIRO should contribute actively to this creative tension. Following the admirable American corporate model we should have at least two court cases going at any one time to test the conditions and limitations that software companies attempt to place on the use of their products.

Legal proceedings can be expensive but, with our considerable investment in computers and computing, any little win may well save us millions of dollars.

Instead, the fight has been waged largely by the PC users' groups who have been remarkably successful in curbing the monopolistic tendencies of the larger software companies by championing public domain software.

And we can thank the US Federal Government for the increased production of open-architecture hardware. They will seldom buy proprietary systems.

In marked contrast the larger users in Australia, particularly CSIRO and the universities, have acted without direction or resolve, apparently preferring instead to think of England. As Policy Circular 88/10 puts it, 'CSIRO has a positive policy towards the protection of the interests of software developers ... ' Makes it sound like a precarious cottage industry, doesn't it?

We seem to have adopted a defensive mind-set in our policy on use of computer software. Anyone who uses a demonstration version of a program for evaluation and compatibility-testing, rather than the real thing, is guilty of gross financial irresponsibility and technical incompetence. But anyway, CSIRO should refuse to deal with a company that will not supply a full version on approval. Nor should it deal with companies that decline to provide organisation or site licences for their software.

CSIRO can contribute significantly to a just rationalisation of the rights and obligations surrounding the use of computer software for scientific purposes. It certainly has the clout to do so. Does it not also have the duty?

❖❖❖

Historic first: personal assistants' workshop

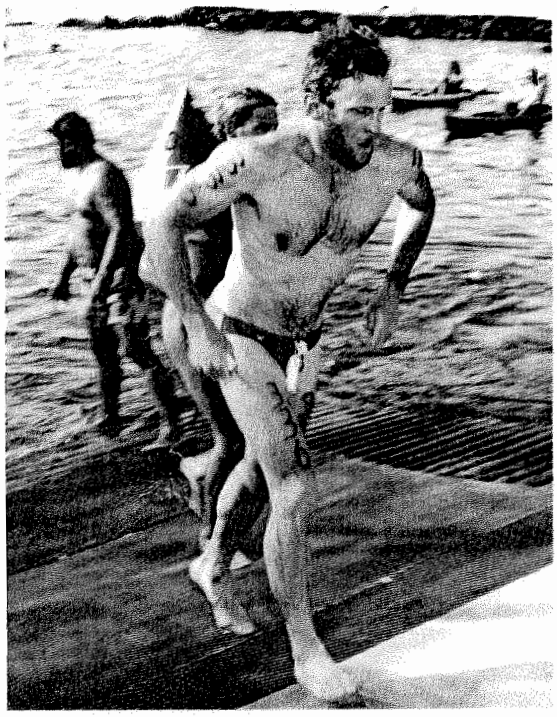
If there's one thing personal assistants are skilled at it's timing. They have to be, the way bosses keep turning up and disappearing and changing their plans at the last moment, or just after.

Well, from a dramatic effect point of view, the timing couldn't have been much better for CSIRO's first-ever personal assistants' workshop. It was held in Queanbeyan, outside Canberra, just one week before the public announcement that CSIRO's new Chairman was to be a woman, Dr Adrienne Clarke.

If you don't know what I'm talking about, have a look at the photograph opposite, taken by John Houldsworth, of the entire group. Notice any missing genders? Women may be moving into men's territory when it comes to jobs, but men certainly aren't moving into theirs. Understandable, really.

Carmel Macpherson, newly appointed head of CSIRO's Human Resources Branch, opened the historic workshop with a speech in which she said she thought such a gathering couldn't have happened a few years back. That's probably right, but she got her best laugh when she said that personal assistants who were working long past regular hours ought to be getting paid for it.❖

CSIRO's Iron Man goes to Hawaii



As foreshadowed in *CoResearch* 343, (September), the Division of Forestry's remarkable Mick Crowe completed the gruelling Hawaiian Ironman Triathlon on October 19.

With Hawaii's usual high humidity levels, air temperatures in the thirties and 1,349 other Ironmen from around the world to compete against — most with far fewer than Mr Crowe's 43 summers behind them — he completed the course well up in the field, with the very respectable time of 10 hours 47 minutes. (The winner's time was 8 hours 20 minutes.)

Mr Crowe said that one of the great things about triathlons was that everyone was in it together — a mixture ranging from the finest in the world to first-timers. This had resulted in a spirit of camaraderie unusual in sport today.

'Encouragement of fellow competitors,' he said, 'is very common, and adds greatly to the enjoyment of the event.'

Mr Crowe said that the Hawaiian Ironman Triathlon had orginated from a bet, 'something with which most Australians can identify.'

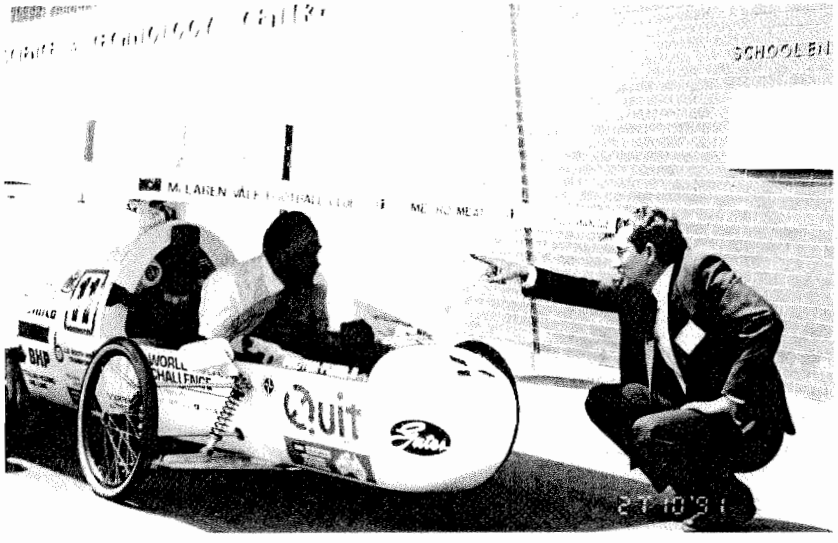
'Was the fittest person the one who could run a marathon [42.2 kilometres], or the one who could complete a 3.8 kilometre ocean swim or the one who could complete a 180 kilometre road race on a bicycle?

'The only way to decide it was to do the lot, and in 1978 they did — 15 hardy souls lined up for the first Hawaiian Ironman.' [The full official title is the Gatorade Hawaii Ironman World Championship].

SIROCREDIT (CSIRO's staff credit union) helped Mr Crowe financially, and he said he particularly wanted to thank them.

He also wanted to alert *CoResearch* readers to the CSIRO Triathlon to be held at Weston Park in Canberra on February 28 1992. The swim will be over a distance of 450 metres, the bike ride 13 kilometres, and the run 4 kilometres. (Doesn't sound like much after Hawaii, does it?) If you're interested, call him on 06 281 8211.

And now here's something you didn't know. Maybe. A quarter of the competitors in the Hawaiian Ironman event were women.❖



Above, former Australian world champion Formula One driver Sir Jack Brabham road-tests a solar-powered racing car at the opening of CSIRO's Science Education Centre in Wayville, South Australia, on October 28. The car, built by Morphett Vale High School students with CSIRO sponsorship, was designed to compete in the Darwin–Adelaide Solar Challenge. The Centre, a joint project of the South Australian Department of Education and CSIRO, will move in with the new Investigator Science Centre at Wayville Showgrounds. Its aim is to get young people interested in science by means of hands-on displays showing science in action. On the right of the picture is the Manager of the Centre is Mr Rick Daley.

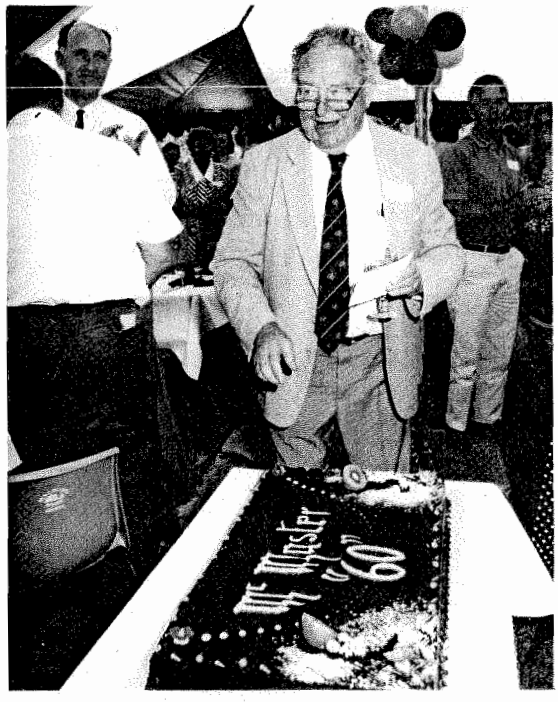
McMaster Animal Health Lab celebrates its 60th birthday

The F.D. McMaster Animal Health Laboratory was opened in Sydney in 1931, and on November 14 1991 more than 170 people gathered there for a lunch to celebrate its 60th birthday.

The laboratory was built on a site provided by Sydney University, with a donation of twenty thousand pounds from Mr F.D. (later Sir Frederick) McMaster, a grazier of 'Dalkeith', Cassilis, NSW. In August 1931 a small group of scientists led by Dr Ian Clunies Ross moved into the laboratory to perform research into worm parasites of sheep. The McMaster family contributed further funds for the purchase in 1936 of the McMaster Field Station at Badgery's Creek, and in 1956 the Ian McMaster Wing was opened in memory of Sir Frederick's only son Ian who was killed at the battle of El Alamein. The laboratory currently houses about 60 staff of the Division of Animal Health who perform research into parasitic and bacterial infections of sheep.

The party was organised by a group of current staff and held on the lawn outside the lab. There were present staff, past staff including Dr Hugh Gordon who attended the original opening 60 years ago and began work there in the early 1930s, Dr Helen Newton Turner — one of CSIR's first statisticians, Dr Victor Cole whose books on cattle and sheep husbandry are well known, Dr Judith Koch who recently retired from the Division of Biomolecular Engineering, and Dr Alan Donald, Director of the Institute of Animal Production and Processing. There were a total of six Officers-in-Charge of the Laboratory at the gathering, and staff from every decade since it opened.

Wine and conversation flowed well into the afternoon as old friendships were renewed. Below, Dr Hugh Gordon about to pick up a knife and cut the 60th birthday cake. (Photo by Phil Potter of the Division of Animal Production.)❖



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