Some of CSIRO's environmental research

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Broken glass is one of the ingredients of the white surface layer of a million facing bricks made at a Melbourne brick-works each year; it comes from bottles that would otherwise be waste to dispose of. CSIRO researchers devised the process.

Sun-powered water-heaters designed by CSIRO are now saving an estimated 5000 tonnes of coal a year, and are likely to save a lot more as awareness grows of the need to conserve oil, coal, and natural gas (and as their prices rise). A new unit is advising the Organization's Executive on solar energy research as part of a growing effort to find ways to use the sun's energy.

In northern Australia researchers are asking residents of mining towns what they like and dislike about their surroundings as part of a project to work out ways to make life in tropical towns more pleasant.

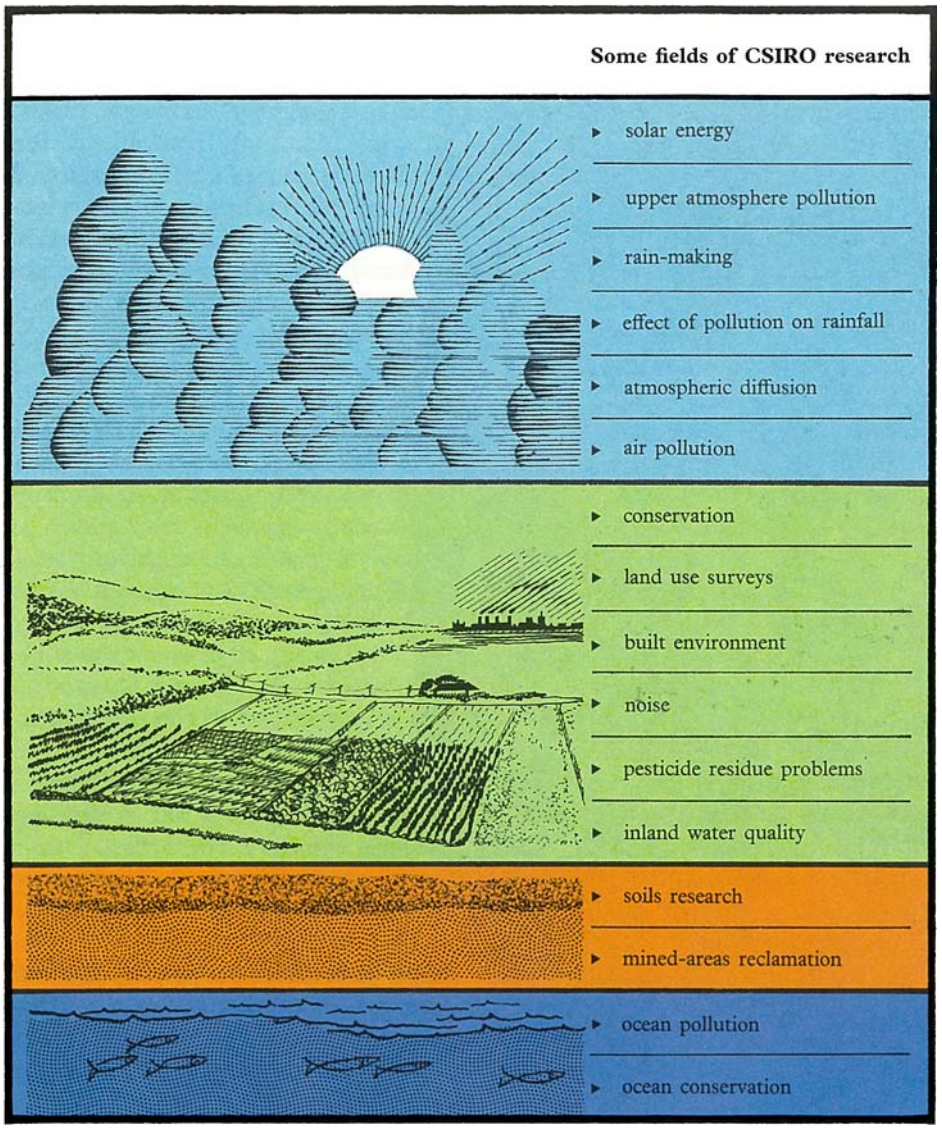
At Two People's Bay, W.A., scientists have been studying the way noisy scrub birds live. The birds are known nowhere else, although they were once scattered more widely, and they may need help to escape extinction.

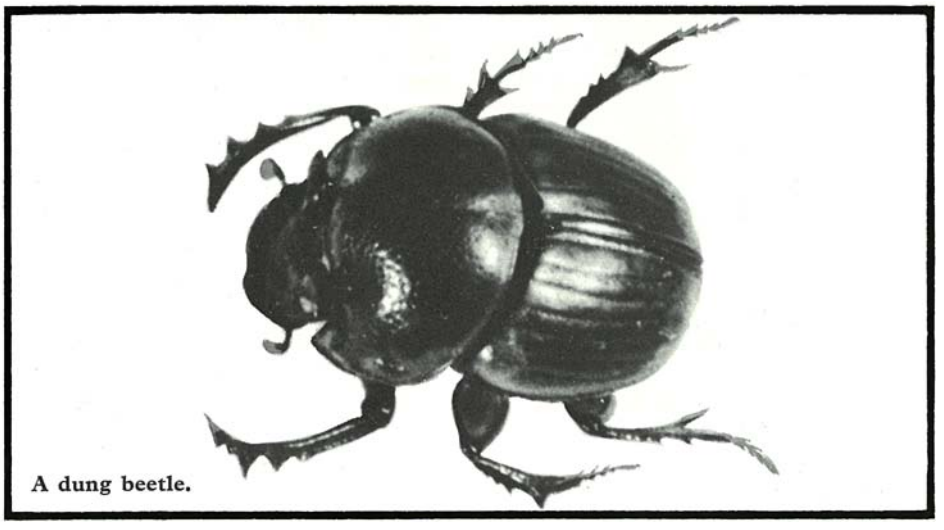
Environmental research is a wide-ranging category. CSIRO is doing a lot of it, more than ever before. The Organization is becoming more 'people-oriented' as distinct from 'industry-oriented'. Many of its environmental projects — such as upper-atmosphere monitoring and surveys to find out what wildlife is where — have little immediate value to industry.

Others, such as research to find uses for industrial wastes and to see to what extent kangaroos and sheep eat the same grasses and are hence in competition, clearly are relevant to industries. That doesn't mean they are not important to the whole community as well.

There is increasing emphasis on co-operation with researchers from other organizations, including social scientists, in major research projects. An example is a study of present and possible uses of land in a shire in the south coast region of New South Wales, Eurobodalla, involving researchers from CSIRO, the New South Wales Department of Environment, the Australian National University, and the Canberra College of Advanced Education. They are assessing the values of all the different types of country in the shire, from sandstone plateaus and trout streams to mangrove-fringed estuaries, for uses ranging from industry to nature conservation. They are also interviewing local people to find out how they think particular areas should be used.

Research on air pollution includes projects to stop or greatly reduce emissions of fine dust from coal-powered factories, of sulphur oxides from smelting plants,





A dung beetle.

and of hydrochloric acid fumes from glazing works. Scientists are also monitoring atmospheric levels of environmentally important gases such as carbon dioxide and ozone, using aeroplanes and balloons as well as ground-based instruments.

Work on water

Water pollution research includes work to clean up effluents from paper mills, wool-scouring plants, tanneries, and meatworks. Also scientists are working on improved sewage treatment methods using chemical rather than biological processes, and it should be possible to re-use the water that emerges, at least in factories and on the land. They have developed an economic process for removing most of the salt from brackish bore and river water to bring it up to town supply standard.

Oceanographers are studying the ways pollutants disperse in the ocean; these must be understood if the effects of dumping wastes off-shore are to be predicted and pollution problems avoided. Ocean-pollution monitoring stations are maintained around the Australian coast.

In the Darling Range, the water catchment for Perth, a big project is under way to find out how forestry, farming, bauxite mining, and other land uses within the catchment area affect the amount of water available and its quality.

Pests and plants

Entomologists are developing ways to control pests without using polluting pesticides. The number of pest species succumbing to biological control is growing; dung beetles, for example, are proving their mettle in the countryside, disposing of millions of tonnes of droppings that harbour pests. Another approach is the use of pheromones, substances secreted by insects for various purposes, to fatally interfere with aspects of the pests' lives.

CSIRO scientists are doing, and have been doing for a long time, a great deal of the basic fact-finding that is needed if efforts to conserve plant species and wildlife are to have good prospects for long-term success.

In the Snowy Mountains, for example, they have been studying since 1955 the diverse and easily damaged natural vegetation and its needs. Their work has included investigations of the damage done by grazing, which was banned from the high country in 1958, and of the prospects of damaged areas returning to a near-natural state. Other plant communities receiving attention include subtropical rainforests in northern New South Wales and Queensland, which have for a long time been retreating before urban and agricultural development.

Wildlife research includes studies of species that people shoot and trap: kangaroos for meat, skin, and sport; eastern water-rats for their fur; and stubble quail and waterfowl as game birds. Others under study include Australia's unique monotremes, the platypus and the spiny ant-eater, which are more likely to be threatened by encroachment of town and country development on their habitats than by people with guns.

Environment is news, and so, we believe, it should be. Environmental research is a growing thing in CSIRO. This magazine sets out to tell people about it.