Scientific Research in Australia

AUSTRALIA, settled only since 1788 and an independent nation since 1901, has faced development problems arising largely from these circumstances, which are in many respects unique. The environment confronting the first settlers was so vastly different from their past experience that old methods had to be replaced by new ones evolved from relatively fundamental principles. Agriculture was naturally the prime problem; there was no native agriculture and hence no guide to what crops and practices suited local conditions. The soils, climate, vegetation, and fauna were quite dissimilar from those in Britain. Many problems have not yet been satisfactorily resolved, and research in agriculture and biology is still vitally important to the country.

Research for these "primary" industries was given a prominent place when the new dominion initiated research activities following federation in 1901; and from small beginnings, as the Institute for Science and Industry, grew the federal government Council for Scientific and Industrial Research, established by act of Parliament in 1926. In 1949, the council, in turn, became the Commonwealth Scientific and Industrial Research Organization.

Meanwhile, two world wars, in which the Commonwealth of Australia was a full participant, stimulated progressively more emphasis on research in the physical and engineering sciences, which are now strongly represented in this and other Australian institutions. The greater part of CSIRO's activity is, however, still focused upon the fundamental aspects of agriculture and biology. Set up along lines similar to the Department of Scientific and Industrial Research in the United Kingdom, CSIRO now includes 34 separate research units spread over the nation, of which 20 are concerned mainly with the primary industries. (There are 15 major divisions, 14 independent sections, and 5 regional laboratories, the last having diversified staffs and each of the others having one or more specialized laboratories and field stations.)

Only two well-known research projects in which CSIRO has been prominent will be mentioned: Noteworthy progress has been made in elucidating the parts played by several of the minor elements in plant and animal nutrition. Since Australia has large areas in which soils are deficient in one or more of these elements, this has already resulted in marked increases in production and in better land utilization. Even some former wastelands are now in use. The second project is the development of aids to navigation that have won world-wide recognition and acceptance. These are typical of the scientific projects in the civil field directed toward the development and use of the nation's resources. The organization's budget is now about £A3 million ($6.7 million), which is considerable for a country with an area substantially the same as that of the United States but populated by less than nine million people.

The demands of World War II led to extraordinarily fast growth in industry, and this has continued under the stress of conflict in Korea and world economics. These factors have caused other research agencies to grow rapidly, too. The joint venture Australia is making with the United Kingdom into the development and testing of long-range guided missiles, together with other less spectacular defense programs, has given prominence to the contributions made by the other two major scientific agencies of the federal government, the Defense Research Laboratories and the Aeronautical Research Laboratories of the Department of Supply.

The remaining foci of research are the universities. Until recently there were six, one in each state, but independent of government in management. Recently New South Wales has established a University of Science and Technology, and the federal government the Australian National University in Canberra, an institution of higher learning devoted to research at a high level, and not primarily to teaching. Through the National University such outstanding Australian scientists as Howard Florey and Marcus Oliphant are again being linked closely with Australia.

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