

interrupted. The new fallout apparently came from the sixth Chinese nuclear test of June 17, 1967.

The ratio of cerium-144 to caesium-137 increased steadily from August 1967, as the debris from the Chinese test contributed an increasing proportion of the radioactivity at ground level in Britain. By mid-1968, fallout was derived in roughly equal proportions from the Chinese test in June and the reservoir of old debris in the atmosphere. Fission products from the later Chinese test of December 24, 1967, had barely reached Britain by mid-1968 and accounted for only 10 per cent of the total. From changes in the ratio of cerium-144 to caesium-137, it appears that the debris from the Chinese test has about the same residence time in the upper atmosphere as older debris and that the test of June 17, 1967, roughly doubled the size of the reservoir in the northern hemisphere.

In spite of this, the rate of deposition of long-lived nucleides in rain during the first half of 1968 was only 75 per cent of that of 1967, which suggests there may have been a reduction in the rate of washout of the new debris. This may only be temporary, of course. Since mid-1966, the accumulated deposit of strontium-90 in Britain has stayed constant; the new deposits balanced decay of the old and the rate of new deposition in 1967-68 was only a tenth of that in 1962-63.

Between June 5, 1967, and September 8, 1968, the French tested eight nuclear weapons in the south Pacific, but it is too early yet to detect any inter-hemispheric transfer of long-lived nucleides in the stratosphere. Short-lived fission products transferred in the troposphere were, however, detected in Britain within two weeks of the Chinese tests and about a month after the French tests. Barium-140 apparently travelled from the French testing ground north across the equator and was then carried across south-east Asia in the south-west monsoon.

On a global scale—and the report mentions that comparative tests of the American and British fallout monitoring systems have shown there is no significant difference between them—about 0.27 MCi of strontium-90 was deposited in 1967. This is roughly half the amount of the previous year and one-tenth the deposit of 2.87 MCi in 1963, which was the highest level ever recorded. The global accumulation of strontium-90 actually declined marginally in 1967 from 12.53 to 12.49 MCi.

#### CSIRO

## Australian Research Boom

THIS is undoubtedly a time of growth for the Commonwealth Scientific and Industrial Research Organization of Australia. The annual report for 1967-68 shows that treasury funds for capital works increased to \$3.08 million from \$2.9 million in 1966-67. Several large building projects are under way, including rehousing of the Division of Chemical Engineering and an extension for the Division of Dairy Research. New laboratories or extensions have been completed for the Divisions of Radiophysics, Land Research, Meteorological Physics, Mathematical Statistics and Horticultural Research, and two more laboratories are planned as well as the new head office which the Government has approved for Canberra. This is expected to be ready by December 1970.

More than nine-tenths of CSIRO's resources are committed to the organization's first function, scientific research. In 1967-68, \$40,495,130 was spent on investigations, \$3,425,413 more than during the previous year. There are now almost forty divisions and sections of CSIRO throughout Australia and its territories working on problems ranging from plant nutrition to radio astronomy.

The Division of Soils is trying to improve the health of pine seedlings by infecting the roots with strains of mycorrhizal fungi that are particularly efficient at extracting nutrients from the soil. Fleas are being used by the Division of Animal Genetics in an attempt to decrease the proportion of rabbits that are immune to myxomatosis. This disease is a less efficient killer now than when it was released in 1950, because there is now a less virulent strain of myxoma virus that does not kill, but after infection the animal is immune from further infection. The rabbit flea, which was the principal agent of spread in Europe, has been imported and bred in Sydney. The advantage of the flea over the mosquito as a vector of myxoma virus is that after death there is a mass exodus of fleas onto another rabbit. Thus strains of virus which kill quickly are spread widely. The fleas are harmless to wildlife, domestic animals and man, and field trials with rabbits are now in progress.

Whiter and brighter wool is being produced by treatment with thiourea and formaldehyde, which the Division of Protein Chemistry has found to reduce the rate of yellowing. A new process for more efficient extraction of gold and silver from certain ores has been developed by the Ore Dressing Investigations Laboratory. Sulphide concentrates are ground, treated with cyanide, roasted, leached with an acid brine solution and again treated with cyanide, and more than 90 per cent of gold and silver can be recovered. Previously less than 50 per cent had been extractable.

#### AMERICAN EDUCATION

## Value of a Degree

IN the United States, the average college graduate can look forward to earning about \$508,000 in his lifetime, or just about 50 per cent more than the average high school graduate's earnings of \$341,000 and more than double the high school dropout's \$247,000. This can be inferred from the *Digest of Educational Statistics, 1968* (GPO, Washington, \$1.75) just published by the Department of Health, Education and Welfare. Just over seven out of every ten fifth grade students in 1959 graduated from high school in 1967, four then went on to a college and two are likely to finish with first degrees in 1971.

In 1967, 56.4 million children were enrolled in schools staffed by 2.6 million teachers, and no fewer than 15 per cent of the 25 to 29 year olds had completed four or more years at college. On the other hand, 2.4 per cent of the population more than 14 years old in 1960 were illiterate. In the southern states, with the exception of Florida, the percentage of illiterates was well above the national average; Louisiana topped the list with 6.4 per cent illiterate in 1960, the latest year for which figures are given.

The rapid growth in private schools which occurred in the fifties has slackened off in the past five years, so