

IN BRIEF

Call for dementia research

IN its report *Senile and presenile dementias: a report of the MRC sub-committee*, the Medical Research Council recommends that senile dementia and the rare presenile dementias be designated areas of high research priority, although it does not recommend setting up a special MRC Unit yet. The main message of the report is clear however; an estimated 5–10% of elderly people in the UK suffer from senile dementia about which virtually nothing is known. The MRC should encourage clinical units prepared to undertake the intensive studies needed and support special workers within institutions caring for demented patients, who would organise research and liaise with laboratory workers

carrying out parallel biochemical, pharmacological and histological studies.

One of the most urgent needs is a clarification of the various types of dementia and their comparison with the normal ageing process. Little is known about the early stages of senile dementia and the report suggests that community studies of the elderly might be grafted onto surveys already in progress for other purposes.

German nuclear funds

IN the Federal German government's budget proposals for 1978, DM1.45 thousand million is ear-marked for nuclear research and technology. Allowing for a 4% inflation rate, this means an increase of 8.5% over the

1977 figure of DM1.3 thousand million. As before, financing the government nuclear research centres will be a main consideration and DM700 million is being made available for their maintenance.

The prototype 300MW fast breeder reactor under construction at Kalkar is costing DM2.86 thousand million at present rates and 90% is being borne by the state, with the Belgian and Dutch governments contributing DM719 million. The cost of this reactor has greatly increased year by year—DM200 million from 1977 to 1978 alone—and its completion is expected in 1983. The costs of the 300MW high temperature reactor being built at Schmehausen are running at DM1.75 thousand million.

AGRICULTURAL technology in the USA has evolved with a rapidity that is seldom perceived except by participants in its use. The consequences of migration from rural to urban areas are evident to most people, but few city-dwellers know much about what happens on the farm these days.

The change from muscle-power to petroleum has proceeded almost to completion, and is to all intent irreversible. The Council for Agricultural Science and Technology recently published an energy-use report prepared by 22 agricultural scientists. They point out that to produce today's US crops by 1918 technology would require 61 million horses and mules that would need almost half of the cropland now in cultivation to supply their food. Performing the necessary additional hand labour thus involved would call for the relocation of almost one-third of the total working population in the United States. The average cost of their toil, at \$26.50 per day, would be about nine hundred times as much as the cost of electrical energy to carry out the same amount of physical work. Very few people have first-hand memories of how crops were raised and harvested 50 years ago, and not many can comprehend what life would be like if horses were, once again, the main source of transportation.

Agricultural production uses only 3% of the energy consumed in the USA. Jet aircraft use more than this. More food is being produced than ever before, and with less human labour. In 1976, the US gained \$23 billion in foreign exchange from exporting agricultural products, as compared with \$34 billion spent on imports of energy for all purposes.

One-third of the energy used in agriculture is employed for producing fertilisers, and only 5% for production of pesticides, principally herbicides, insecticides and fungicides. One estimate is that 41% of food and

Energy for crops**THOMAS H. JUKES**

fibre production in 1960 would have been lost if pesticides had not been used. Biological control as a replacement for chemicals is 'in the news', but, as the energy-use report says, "Biological control of plant pests is the ideal in theory, but progress in practical implementation is slow and difficult."

On 27 September the Secretary of Agriculture criticised the use of pesticides as being wasteful of petroleum. He did not mention that their production and application consume less than 0.2% of the country's energy total. I wonder how he allocates

priorities: certainly he doesn't seem to be 'thinking agriculture'. There is much dissipation of fossil fuel for purposes of convenience and pleasure as contrasted with its use for food production. Tourism and family reunions must account for a substantial proportion of jet plane travel. The highways are clogged with passenger automobiles and recreational vehicles, and the waterways resound to the hum of motorboats. Give us the petroleum-powered luxuries of life, and we will dispense with the necessities. Maybe! If food really becomes scarce, there will be plenty of trouble.

Statistics are dry and boring compared with the actual rural scene. Huge tractors till the vast wheat country, clean of officious fence or hedge, in the Great Plains. The big fields of hybrid maize in the corn belt grow apace in the hot sun, nourished by synthetic ammonia, and protected by chemical weed-killers. Further west, green discs of the new centre-pivot irrigation systems dot the landscape. These are yet another replacement of manpower by energy. There has been recent criticism of the University of California for developing new farm machinery that does the work of human beings. This is like protesting against the tractor, the combine, the plough and other inventions that lifted the burden of hand labour.

Only 5% of the energy used on farms is derived from electricity. Optimistically speaking, solar energy could perhaps supply another 25% by the year 2,000, says the report. When it comes to agricultural production, no complete or near-complete replacement seems to be in sight for the dwindling supplies of petroleum.