

visitors to look at its galleries and attend its lectures and films, and an impressive new insect gallery was opened to the public in October 1968 which should help to boost attendances in future.

POLLUTION

Fish Throng Sweeter Thames

THE last salmon to be taken up river in the lower Thames was caught in June 1833 and the commercial fisheries, some of which brought in annual catches worth £5,000 a year, disappeared a few decades later. The villain of the piece was an English invention, the water closet, which by its widespread adoption in 1810 rapidly turned the Thames into a sewer for the two million inhabitants of London.

The Greater London Council and the Port of London Authority have made notable efforts to clean up the river, and within the past ten years fish have once more returned to the Thames. A sample of fish trapped in the intake screens to power stations has shown that forty-one different species were present in the lower Thames last year, according to a survey by Alwyne Wheeler of the British Museum (Natural History) (*Biological Conservation*, 2, 25; 1969). Particularly encouraging is that smelt, a member of the salmon family, have succeeded in crossing the most heavily polluted part of the river between Gravesend and Putney. In the past five years this stretch of river has rarely been totally deoxygenated, as used to be the case, but there seems little hope of the oxygen reaching the 30 per cent saturation which is necessary for the survival of salmon. The prospect that salmon will return to the Thames is remote not only because of their particular sensitivity to lack of oxygen but also because the weirs and other obstacles that have since been built may prove impassable.

AGRICULTURE

Research for the Farmer

THERE might almost be a biological clock controlling the regularity with which Agricultural Research Council units come and go. The annual report for 1968-69 (HMSO, 12s 6d) records the closing of the unit of embryology at Bangor on the retirement of its director, Professor F. W. Rogers Brambell. But in the same year two new units were set up: the unit of invertebrate physiology and biochemistry split between Professor A. W. Johnson at Sussex and Dr J. E. Treherne at Cambridge and the unit of developmental plant physiology and pathology under Professor P. W. Brian at Cambridge.

As the report says, ARC units are usually created to provide additional research facilities for a university scientist who is recognized as a leading authority in a line of research which is of immediate or potential interest to the council. After agreeing to the broad outlines of the themes to be studied a director is free to pursue his research in whatever way he thinks fit without interference from the council. These units are regarded as an important means of recruiting to the agricultural research service, and when a director retires and his unit is disbanded staff members can usually be transferred to other ARC posts.

In 1968-69 the research units received £830,991 of the ARC's total expenditure of £13,909,900; £3,860,098 went to the ARC institutes and another £7,707,504 to other state aided agricultural institutes, such as Rothamsted Experimental Station and the National Vegetable Research Station, which are not supported solely by the ARC. These items of expenditure are all slightly greater than the previous year's figures, but there has been a noticeable decrease in grants for studentships, training awards and fellowships, which amounted to £17,485 compared with £34,358 in 1967-68.

As usual, much of the annual report is taken up with recent developments at the institutes and units, in particular those visited by the council's representatives making their routine inspection of progress. Last year they went to the National Institute of Agricultural Engineering, where they were able to see the latest developments in potato harvesting, which include an automatic separator for removing potatoes from clods of earth and stones. X-rays are beamed onto mixtures of soil, stones and tubers, but pass through only the potatoes, which are then deflected out of the machine. Some fully automatic harvesters, incorporating the separator, are now being manufactured for use on farms.

Other recent developments featured in the report include the low alcohol cider produced at Long Ashton Research Station. The production of this beverage involves distilling the alcohol from normal cider and replacing the volatile flavour constituents removed during distillation. Cider produced by this method, for which a patent has been filed, contains less than 1 per cent alcohol.

An intriguing possibility for biological research has come from joint work carried out at the Pest Infestation Laboratory and Rothamsted Experimental Station. It seems likely that the wax moth, *Galleria mellonella*, a pest of bee hives, can be controlled by adding *Bacillus thuringiensis* to the foundation wax put in by bee keepers. The bacterium is harmless to man and bees, but devastating to the moth.

CONSERVATION

Strong Council

THE Council for Nature is in a stronger position than ever before. This is the conclusion of its chairman, Sir Landsborough Thomson, reviewing progress since the adoption of a new constitution in April 1968 (*Working for Nature*, Council for Nature report 1968-69, 2s). Before the change, which replaced an unwieldy executive committee by a properly constituted council, the organization was in danger of becoming too independent, expressing opinions that member bodies might not have shared. This was contrary to the original aims of the Council for Nature, which was set up in 1958 to represent and coordinate the voluntary movement for conservation and natural history in the United Kingdom. Now there are affiliated rather than member bodies, represented on the council through standing committees, although a dozen constitutive bodies are represented directly on the council.

The chairman remarks that the process of streamlin-

ing has not been painless, and has involved redundancy for the general secretary. Apparently much administrative work has been taken on by two members of the council, Mr Peter Condor of the Royal Society for the Protection of Birds and Mr A. E. Smith of the Society for the Promotion of Nature Reserves, bodies which each have four representatives on the council. This, says the chairman, exemplifies the helpful cooperation of the largest constituent bodies. His final remark that permanent arrangements have yet to be worked out seems to be connected with the fact that talks are in progress about the possibility of a merger of the Council for Nature with the RSPB and SPNR. Sir Landsborough, it will be recalled, circulated a plan for a merger on his own initiative in February this year to the chagrin of a good many interested parties.

The council has not been without its financial problems. These have been alleviated to some extent by increases in subscriptions, while donations have increased by £2,153 since December 1967. Nevertheless, activities had to be curtailed last year. *Habitat*, the council's news bulletin, previously published monthly, began to appear every two months during 1969 as an economy measure. The conservation corps was revived by £5,487 from the Soil Association when most of the organizations that had made grants in 1967 failed to repeat their generosity. Arrangements are now in hand to establish the conservation corps as an independent charitable trust. In spite of its troubles the corps has continued to do sterling work in the field. Last year's most noteworthy operations included the construction of a deer observation tower in the Cairngorms national nature reserve for the Nature Conservancy.

Financial difficulties have also hit the youth committee, preventing it from mounting any ambitious projects for European Conservation Year 1970. But the council as a whole will be involved. The October issue of *Habitat* has news of the Countryside Awards Scheme of which the council is a joint sponsor. Projects eligible for awards should have been completed during the past five years and must have produced some physical improvement to the English countryside, or made an educational contribution in increasing awareness of the rural environment. Judges will represent the standing committee of the Countryside in 1970, the Council for the Preservation of Rural England and the County Councils Association as well as the Council for Nature. Awards, in the form of specially designed plaques, will be presented by the Duke of Edinburgh in the autumn of 1970.

SCIENCE POLICY

Canadian Policy Criticized

"THE overall pattern of Canada's chemistry research and development appears to be characterized by a rigidity and lack of cooperation which are the result of the lack of an overall science policy." This is the main conclusion drawn in an extensive report on Canadian chemistry, carried out by the Chemical Institute of Canada. The report does not confine itself exclusively to chemistry, however, but includes recommendations on general government policy for the whole spectrum of science. The report is also concerned that insufficient coordination exists between

industry, government and the universities, and it recommends that consultation and the interchange of personnel between these sectors should be increased. It calls for the provision of postdoctoral assistants for scientists in government and industry "to engage in research work which would complement that in the scientists' prescribed area of special endeavour"—a cry familiar to many people in other countries.

The report is also concerned that an imbalance exists between basic and applied research, and it argues for more effort to be put into applied research, while that in basic research should be maintained. Research institutes should help smaller companies to undertake research and development, by supplying some risk capital. More urgently, a thorough investigation should be made into the supply and utilization of scientific manpower. Again, this is a problem which has occupied many other countries, but this report suggests that the rate of graduation of PhDs will be sufficient to serve a rapid increase in research and development in Canada, the main problem being correct usage of the available talent.

PUBLIC RELATIONS

Around the World in 37 Days

THOSE who believe that astronauts are the next things to angels will have had their faith confirmed this week. The three American moon voyagers flew to London, radiating sweetness, patience and wisdom, in the midst of a gruelling world tour that would make a saint snarl. Someone—President Nixon? an official of the National Aeronautics and Space Administration?—has seen fit to book the three heroes and their wives into twenty-odd countries in 37 days, and into a travel schedule with inexplicable criss-crossings. Ankara on October 21 is to be followed by the Congo on the 22 and 23, and then by Teheran. On their London stop, the three maintained that they did not mind, that it was part of carrying out the President's request to share the fruits of Apollo with America's friends around the world. Only their slight laryngitis and Colonel Aldrin's narrowly glittering eyes betrayed any sign of strain or impatience.

The reason for the rush, apart from noblesse oblige, the duty to be seen by as many earth-bound mortals as possible, is the imminent launching of Apollo 12 on November 12. The three astronauts will serve as consultants. Until then, their whole bag of talents must be displayed day after day. It is no mean feat for a country to have found three men who are eloquent, unassuming, handsome, brave, knowledgeable and—to a singular degree—unflappable.

Mr Armstrong said nice things about the Soviet space programme and gave his views on the origin of lunar craters (volcanic, he thinks). Commander Collins had acquired a new perspective from space: both political wrangling and pollution seem senseless from 100,000 miles out. They provided the narration for a bright colour film of their voyage, with humour but an impressive lack of barrack-room bonhomie, and can apparently, when the occasion demands, do so in Spanish. When they came to London, they had given twelve press conferences in 13 days. It all seems a nasty way to treat an astronaut.