

Botany and Poison

THE rabbit has digestive juices which can neutralize the poison of the death cap mushroom—*Amanita phalloides*—in amounts sufficient to kill a whole human family. Such is the difference in the susceptibility of different species to the effects of plant poisons. Humans are, however, rarely poisoned by plants, whereas poisoning of domestic animals is quite commonplace. Horses and cattle can even develop cravings for such dangerous delicacies as laurel, rhododendron, oak leaves and rushes. To help the stock owner the Ministry of Agriculture's guide, *British Poisonous Plants*, has been published in a second edition after 14 years (HMSO, 11s.).

Most plant poisons are irritants causing inflammation of the tissues with which they come in contact. They affect first the skin and the lining of the mouth, stomach and bowels. Poisons which enter the blood stream may affect any part of the body, but many of them, such as the alkaloids, are selective poisons and affect specialized areas of the body more than others. Their action differs considerably among different animal species. Morphine—from the opium poppy, *Papaver somniferum*—for example, induces sleep in man and dog, but if given to horse or cat it may produce uncontrollable excitement to the extent that the animal damages itself irreparably.

Sudden death is most likely to be caused by the yew tree and plants which contain cyanogenic poisons which break down to yield hydrocyanic—or prussic—acid. Cyanogens are found in apricot, cherry, peach and plum kernels, in apple and pear pips and many other plants. The commonest result of poisoning of cattle, sheep and goats is cessation or suspension of rumination or cud chewing after the breakdown of the micro-organisms which usually effect the breakdown of foodstuffs.

Many plant poisons remain active after drying and storage, which is why so much animal poisoning occurs in the winter when stored foods are used. Poisoning by ragwort, horsetail and monkshood can often be traced back to hay or other stored fodder. These and other such plants, which commonly contain alkaloids, glycosides and saponins, are listed in the handbook together with their likely sources. There is also a list of plants which can affect milk if eaten by lactating cows. In some cases the poisonous principles are secreted by the udders in sufficient quantities to make the milk poisonous for children and calves. Usually, however, the odour or taste is so unpleasant that they would not voluntarily drink such milk.

Canadian National Museums

THE Canadian Government took the bold step on April 1 of establishing a single independent corporation, to be known as the National Museums of Canada, to administer and integrate the work of the five national museums in Ottawa. The museums which have lost their separate existence are the National Gallery of Canada, the National Museums of Man, of Natural Sciences and of Science and Technology and the Canadian War Museum. The hope is that this reorganization will increase efficiency and improve the services they can offer to the public. There is every chance that it will succeed. With small museums—the total

staff is only 374, or less than that of the British Museum alone—there can be little justification for separate administrations. The new scheme should be a distinct improvement.

The thirteen trustees of the corporation will have at their disposal in 1968–69 a total budget of \$7,344,500, which includes a \$1,050,000 non-lapsing purchase account. Compared with the estimated budget of nearly £7·07 million for 1968–69 for the fifteen national museums and galleries in Britain, that is perhaps small beer. But the comparison is misleading, for Canada spends about as much per head of its population as does Britain; of the £7·07 million spent in Britain, all but just under £1 million goes on salaries and administrative costs. When the £1 million available for purchases is parcelled out among fifteen institutions, the amount each gets is derisory.

The National Gallery in London, for example, receives £200,000 a year and the Science Museum has not received money for purchases since the £8,000 it got in the financial year 1966–67. This is not entirely the fault of the Department of Education and Science. The Science Museum, which relies heavily on gifts of objects and apparently spends most of its money on transporting them to the museum, has incredibly enough failed to find anything in the past three years on which to spend its pittance. It is no wonder that it often seems a kind of cheap showroom for the nationalized industries.

New Schools at Oxford

from our Oxford Correspondent

LAST week's *Oxford Gazette* announced a set of measures of particular interest to the university science faculties. There are, for example, to be departmental committees in most, if not all, of the science departments. All the faculty staff working in the department will be members, and they will meet at least once a term to advise the head of the department on such matters as the annual estimates, the allocation of resources, and junior appointments to the staff. Previously, members of a department have only been able to discuss departmental affairs publicly in congregation, where, even if there was time for discussion, few of the members were likely to have been able to follow arguments about specialized topics.

The other changes promised concern the rearrangement of one honours school and the creation of two others. The present four year course in forestry is to be replaced by a three year course of which the first two years will be common to agriculturists and botanists as well as foresters. The forestry officers' course will be replaced by a diploma course for graduates. The faculty of agriculture and forestry is to be subsumed, as a sub-faculty, under the faculty of biological sciences, but the departments of agriculture, forestry and botany will remain separate. This continues the reorganization of the teaching of biological sciences which began four years ago with the inception of a one year common course for agriculturists, botanists and zoologists.

The two new honours schools to be created are those of mathematics and philosophy and of physics and philosophy. While the joint honours schools on the arts side, philosophy, politics and economics, and

greats, contain a considerable number of all arts students, the joint schools involving science subjects, philosophy, psychology and physiology, and economics and engineering, have been small and hard to get into. This will also be true of the two new schools. In them, as in PPP, the component subjects will be taught separately under the supervision of the faculties concerned. Mathematical logic is seen as a natural bridge between the disciplines in the school of mathematics and philosophy. The first public examinations (honour moderations) will consist of five papers, of which three will be identical with those of mathematical moderations, one will be on logic, and the last on the theory of knowledge. The final examination will consist of eight papers, four in mathematics, and one, on the history of knowledge, will be identical with one in the PPE school.

Those reading for the school of physics and philosophy will spend two-thirds of the first year on physics to prepare themselves for the advanced work of the last two years. The syllabus will concern itself largely with those branches of physics with most philosophical implications; atomic physics, rather than the solid state or statistical mechanics. There is no doubt that this kind of school in which related subjects are taught concurrently is of great value both to the student and to the community. The pity is that when the courses are held concurrently (rather than consecutively) it is difficult, for administrative reasons, to provide more than a few of the joint schools that might justifiably be started—mathematics or physics with music, psychology with sociology, or biology with mathematics.

Nuffield in Africa

REVISION of school curricula in East Africa seems to have begun well. At a conference organized in March by Credo (Centre for Curriculum Renewal and Educational Development Overseas), representatives of the ministries of education in Kenya, Uganda and Tanzania agreed to collaborate with teachers in a programme of integration and revision of school science in East Africa. Credo, an independent organization financed jointly by the Ministry of Overseas Development and the Nuffield Foundation, believes that the Nuffield science courses, suitably adapted, will provide the much needed modern approach for African school-children. The idea is that teachers in the three East African countries who experiment with these courses can feed their modifications back to a central body which will then incorporate them into the syllabuses. At present, examinations are set by the Cambridge Syndicate, but an East African Examinations Council was set up in February this year. The first examinations from this new body will be set for 1969, in local subjects such as languages and agriculture, with the Cambridge Syndicate moderating the papers to ensure that standards are maintained. Although the syndicate has indicated that it is prepared to consider examinations set on the Nuffield syllabuses, these will have to be set and marked by the East African Council. There is also some scepticism at the syndicate over the question of standards, because it is thought that the Nuffield courses will be more time consuming than the existing ones—evidently African children work more slowly than their English equivalents.

Parliament in Britain

by our Parliamentary Correspondent

Construction Industry

MR ROBERT MELLISH, Minister of Public Building and Works, gave details of the progress of the Construction Industry Research and Information Association. It now had 610 member organizations, he said, but this was only a fraction of what could be achieved. He was trying to arrange a link between the association and the construction industry training board. The association was in the process of appointing staff for a regional advisory service, and he wanted the ministry to be represented on this regional service. (Oral answer, April 29.)

British Standard Time

MR WILLIAM ROSS, Secretary of State for Scotland, confirmed that there had been a number of Scottish objections to the decision for Britain to come into line with European time. Seventy-two organizations (county councils, town councils, church and other bodies) had sent him objections, as had twenty-seven private firms and individuals. Two members of parliament had sent petitions signed by their constituents. (Written answer, April 29.)

Technology

MR WEDGWOOD BENN, Minister of Technology, refused to accept a suggestion from Mrs Winifred Ewing that he should set up an advanced institute of technology in the Northern Highlands of Scotland. He doubted whether it would be feasible. Research within industry might well bring greater and speedier benefits, in any case. (Written answer, April 30.)

Combat Aircraft

MR DENIS HEALEY, Minister of Defence, expressed unexpected optimism about the prospects of building an advanced combat aircraft to fill the gap left by the cancellation of TSR 2, F 111 and the Anglo-French variable geometry aircraft. A great deal was going on in the aircraft industry, helped by the money the Government was giving to the BAC design team at Wharton (which is working on a design study for a variable geometry aircraft). Consultations within the department and with European allies were well advanced. "The outcome looks favourable," he added.

Nuclear Power

THE Prime Minister, Mr Harold Wilson, revealed that the House of Commons is likely to be given the chance to debate the report of the Select Committee on Science and Technology on the British nuclear reactor programme. But he did not accept the suggestion (from Mr Woodrow Wyatt) that the money spent on nuclear power stations would have been better spent on coal-fired stations. Dr Ernest Davies said that arguments about power costs would be irrelevant until the various conflicting parties could agree on a basis for these calculations. Otherwise, he said, one was just providing further figures for various lobbyists to quote back and forth to one another. The Prime Minister appeared to agree. Earlier in the week, Mr Wedgwood Benn had confirmed that the chairman of the Industrial Reorganization Corporation was beginning discussions with industry intended to devise a new structure for the nuclear power industry. He would make a statement as soon as a practical solution to this very complex problem became apparent. (Oral answer, May 2, and written answer, April 29.)