Association flies the science flag

London

THE flag is flying high for science in Britain this week as the 150th meeting of the British Association for the Advancement of Science, known as the BA, gets under way in Oxford. But the theme is not soley British: in his opening speech at the meeting on Monday, the president of the association, Sir Walter Bodmer, called for collaboration on an international scale in order to meet what he sees as one of the most exciting challenges to science now, that is, to map the human genome and create a 'Handbook of Man'.

"There is still a long way to go to decipher the whole of the handbook" he said, "but a coordinated international effort, probably less than that which was required to put a man on the Moon, could perhaps achieve an end result by the year 2000 or soon after. This surely is a challenge we cannot forego. It has immense cultural value, is likely to provide the basis for the prevention or treatment of most major human chronic deseases, and will stimulate technological developments that are certain to be of . . . economic benefit."

The rest of the week, as usual, is packed with enough lectures, exhibitions and tours to exhaust even the fittest of enthusiasts and to frustrate anyone with only a day to spare for a visit. Deciding what to choose from the programme is a task which alone could take up the half a day. "Dangerous", "Puzzles, fudges and convictions", "Magnets, martians and mathematical microworlds", are just some of the lecture titles designed to intrigue visitors.

One of the difficulties in holding such a large number of events in one week is that it takes thousands of visitors to ensure a healthy attendance at each one. And the organizers will be hoping for an improvement on the disappointing attendance at last year's meeting in Belfast.

One lecture that is sure to draw the crowds is being given by Professor Stephen Jay Gould on the myths surrounding the historic clash between orthodox christianity and darwinism in the forms of the Bishop of Oxford, Samuel Wilberforce and Thomas Huxley, a debate which took place at the 1860 BA meeting in Oxford. Giving a hint at the content of Gould's talk, a spokesman said Gould would argue that "almost everything that everyone thinks they know about the debate is wrong".

Another event which may attract the crowds with its intriguing title is "Science in the graveyard". Researchers might even be misled by the name into thinking this is the debate on the future of science in Britain. But instead they will find themselves on a geological visit to an urban graveyard.

Christine McGourty

Japan plans to build world's biggest fusion device

Tokyo

JAPAN'S Ministry of Education, Science and Culture last week applied for funds to develop the world's largest helical fusion device, which will be built by a new national institute that will open next April.

Japan's largest fusion facility, the giant JT-60 tokamak, is run by the Science and Technology Agency, but the education ministry also operates several smaller fusion devices in universities around the country, including tokamaks, heliotrons, tandem-mirror and laser devices.

In 1986, the ministry's Science Council decided that a new institute, equipped with a large helical fusion device, should be centred on Nagoya University's Institute of Plasma Physics. But it has taken time for the fusion research community to reach a consensus on organization of the new institute and to persuade the Ministry of Finance that a second major fusion machine is required.

The new institute will be at Toki in Gifu Prefecture. The ministry of education has spent about ¥2,500 million ($20 million) over the past three years to buy and level the site — the land, although cheap by Japanese standards, was rather hilly.

And last week, the ministry, in budget requests for next fiscal year, applied for ¥572 million to begin construction of the institute and ¥2,480 million for research and development of the new helical machine. A decision on the budget requests will be made at the end of this year.

The new institute, which will open at a temporary site on the Nagoya University campus next April, will be for 'joint university use', like the Institute of Space and Astronautical Sciences in Tokyo and the High Energy Physics Laboratory in Tsukuba, and will draw about 150 researchers from Nagoya, Hiroshima and Kyoto universities. Kyoto University leads in the development of helical fusion devices, and Professor Atsuo Iiyoshi, head of the heliotron group at Kyoto, is chairman of the design group for the new machine.

Iiyoshi hopes that the institute will have a total staff, including technicians and administrators, of "300 or more" and at least ten posts for foreign researchers, when the buildings at Toki are completed in about three years.

The helical machine will have a major radius of 4–5 m and a magnetic energy of 2 GJ, by far the largest helical device in the world. The design group has opted for superconducting magnets which will require several years of research and development and the machine is not expected to begin operations before 1995.

Several hundred million dollars will be required to build the device, according to Iiyoshi, and industry is keen to win the contracts for the superconducting magnets and peripheral equipment, such as the supercomputer, he says.

So what will happen to the ministry's other fusion projects? The Institute of Laser Engineering at Osaka University is a world leader in laser fusion. The institute recently installed frequency converters in its huge Gekko XII laser to obtain 'blue' near-ultraviolet light which will allow experiments closer to break-even conditions. And Professor Sadao Nakai, director of the institute, hopes to upgrade the laser from 30 to 100 kJ to reach the break-even point. But with the ministry committed to the new helical device this project will probably have to wait.

David Swinbanks

Plans for state slug salted away

Washington

CALIFORNIANS will have to do without a state mollusc. Governor George Deukmejian last week vetoed legislation that would have made the banana slug (*Ariolanax*) the official symbol of the order Mollusca in California.

In his veto message, Deukmejian explained that he did not believe the banana slug was indigenous to California, as it was first identified at the mouth of the Columbia River in Oregon. He also felt that the state mollusc — if there is to be one — should be more representative of the international reputation the state enjoys. Black abalone, pismo clam, common squid and red abalone were all mentioned in the veto message as examples of other molluscs that make a home in California. A move in the state Senate that would have substituted the red abalone for the banana slug failed.

Even without a state mollusc, Californians have a varied array of emblems from the animal and plant kingdoms. There is a state fish (California golden trout, *Salmo agua-bonita*), bird (Valley Quail, *Laphortyx californica*), insect (Dog-face butterfly, *Zerene eurydice*), tree (redwoods, both varieties, *Sequoia sempervires* and *S. gigantea*), animal (grizzly bear, *Ursus horribilis californicus*), reptile (desert tortoise, *Gopherus agassizii*), marine mammal (grey whale, *Eschrichtius gibbosus*), flower (golden poppy, *Eschscholtzia californica*) and fossil (sabre-tooth cat, *Smilodon californicus*).

Joseph Palca