

abroad, many operations abroad are indeed joint ventures gained on the strength of Indian know-how.

What will her own administration's policy be towards the multinationals? Contrary to some suggestions in the Indian press that her government may be more receptive to multinational investment, Mrs Gandhi replied: "Generally, we are not for multinationals. It depends, however. If by multinationals, you mean only the very big concerns, then we would rather steer clear of them. But there are areas where you can't like oil drilling. Or there are areas where it doesn't matter. Suppose they made Coca-Cola here — I have never even tasted it — I don't think it matters much because it is controllable. You have to look at these things individually, but generally speaking we would rather not get involved with them." Coca Cola and IBM were the two leading western companies that had to wind up their operations in India during former Prime Minister Desai's administration.

## Nuclear energy

Finally, a word about nuclear technology. Did she in any way share the growing concern in the West about the feasibility and safety of nuclear technology? "On the other hand," she countered, "in Sweden they voted for it."

Mrs Gandhi has been a strong supporter of India's nuclear programme and its objective of achieving self-reliance. But she says she "can't prophesy anything at this stage" about whether India could achieve that self-reliance in the face of difficulties and delays in its nuclear programme. She did feel that India should put some, if not all, effort in achieving this aim. "We are using it for agriculture and various other things".

Mrs Gandhi did not know when India would receive deliveries of enriched uranium fuel from the US for the Tarapur Atomic Power Station. India has maintained that the US has to supply nuclear fuel under an agreement that came into force in 1963 which cannot be changed unilaterally. She is still extremely critical of western efforts to restrict the spread of nuclear technology. "It is the whole attitude of not allowing the developing to develop more. Once somebody has atom bombs, they are willing to accept it, they don't mind," she says, probably referring to western acquiescence over China's acquisition of the bomb. "They don't want us even to have peaceful explosions, when we have made it very clear that we are not going to make bombs or stockpile any kind of nuclear armaments."

The US administration last week announced that they were asking the US Nuclear Regulatory Commission to send two further shipments of nuclear fuel to India even though it has not signed the Non-Proliferation Treaty. The political sensitivity of the region because of Afghanistan was cited as the reason. □

## Two by two

THE teaching of evolution in American schools has long been slowed by a successful campaign that demands "equal time" for an alternative theory of origins. The leading organization in this effort (advertised in *Nature* p.vi 21 February, 1980) is the Creation Research Society (CRS). In 1972, all members subscribed to the Statement of Belief, the first three paragraphs of which are:

● The Bible is the written Word of God, and because it is inspired throughout, all its assertions are historically and scientifically true in all the original autographs.

● All basic types of living things, including man, were made by direct creative acts of God during the Creation Week described in Genesis. Whatever biological changes have occurred since Creation Week have accomplished only changes within the original created kinds.

● The great Flood described in Genesis, commonly referred to as the Noachian Flood, was a historic event worldwide in its extent and effect.

The Creation Research Society does not promote alternatives to evolutionary theory in other religions. Many readers of the first chapter of Genesis have interpreted allegorically the sweep of the story of creation, but the account of the Noachian flood, in contrast, is precise with measurements, including the dimensions of the ark and the duration of the flood.

On 7 February, 1973, John D. Morris, field director of the Creation Research Institute's Ararat Expedition spoke in Pinole, California, and showed slides of the search for the remains of Noah's ark. His organization is currently taking legal action to challenge the teaching of evolution. Its speakers assert that isotopic dating is erroneous, that evolutionary theory contravenes the second law of thermodynamics and that the fossil record shows an absence of "transitional forms", and is based on bones of animals that were drowned in the Noachian flood.

The Creation Research Society has demanded that, in school textbooks "both the theory of special creation and the theory of evolution are fully and fairly treated". We should therefore examine the details of the flood as explicitly set forth in Genesis 6-8. Genesis 6 specifies the dimensions of the three-story ark as having a volume of about 43,800 cubic metres (one cubit = 0.46 metre). Noah and his family, totalling eight, cared for all living terrestrial animal species for one year and ten days in the ark. This included gathering and loading the necessary food supply.

During the flood, the mountains were covered with water "and every living



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substance was destroyed which was upon the face of the ground . . . and Noah only remained alive, and they that were with him in the ark, and the waters prevailed on the earth 150 days".

The care of all living terrestrial species of animals would include the maintenance of an insectary containing about a million species, many of which are obligate predators or parasites upon others, and some upon vertebrates, an aviary with 25,000 species of birds and an animal colony containing, in addition to 2,500 species of amphibians and 6,000 species of reptiles, 15,000 pairs of mammals. The volume of the ark provided an average of less than 1 cubic metre for a pair of vertebrates plus their food supply. The mechanics of the "disposal problem" are not mentioned in any discussion I have seen. Another unmentioned problem was that of colonizing and preserving a culture collection of tens of thousands of species of bacteria and protozoa, including specialized parasites, before the existence of the microscope. Early explanations of such microbiology relied on the theory of spontaneous generation that was later ruled out by Pasteur's discoveries, and in any case is excluded by the Statement of Belief. The botanical problem is apparent, but is usually not mentioned.

If rain fell to a depth of 10,000 ft (a conservative estimate, insufficient to cover the mountains; actually "all the high hills that were under the whole heaven were covered" and Mt Ararat is 17,000 feet high), the volume of precipitation would have been 393,000,000 cubic miles, which is 1.4 times that of all the water presently on the earth. This rainfall occurred in 960 hours, at a daily rate of 104 ft. Its "drying up" took 167 days. Where did the water go? If it had rapidly entered the interior of the Earth, one would have expected numerous Krakatoa-like explosions. If it had escaped into outer space, why was not all the hydrosphere simultaneously dissipated?