

NSF should receive \$844 million next year. The administration had requested \$885 million. Virtually all the reduction would be taken from NSF's basic research programmes, leaving only enough for a 6.5% increase, about the same as the rate of inflation. The committee specifically stated in its report that it believes academic science has fared relatively well in the federal budget in recent years, and that a major boost in support is therefore unjustified. The Senate Appropriations Committee, which is often more generous towards NSF, has yet to act.

Catch quotas for whales

Last week, a meeting of the International Whaling Commission's (IWC) Scientific Committee was the focus for the latest exchanges in a long standing argument over how whale catch quotas are determined. A statement by the Committee, that no species of whale

is under threat from extinction, was challenged by Dr John Beddington of York University, one of Britain's delegates to the conference.

Dr Beddington claimed that the basis of the IWC's estimates of catch quotas, the 'maximum sustainable yield', is founded on a false premise. It states that a maximum harvest will be achieved if whale populations are reduced to 60% of their original size. Dr Beddington, however, believes that at this level whale populations will become unstable and may die out.

It is expected that protesters against whaling will be out in force during the Commission's main conference which begins on 20 June.

Tenerife allegation

The attempt to identify the victims of the world's greatest aircraft accident at Tenerife in March has involved "a travesty of justice and a major insult

to the field of forensic sciences in the United States", according to Bill Eckert writing in the latest issue of *Forensic Science* published by Elsevier Sequoia. He lists "classical mistakes" made by the Spanish authorities in the investigation. The bodies were removed from the wreckage without marking their location, and were embalmed and placed in coffins before identification was complete. They were examined by local public health and forensic authorities who had little knowledge of the procedure; no dentists were available. The bodies were also removed to another country and to a strictly military base using exclusively non-civilian experts. When other than the best available forensic experts are used, Eckert concludes, questions of a medicolegal nature may never be ascertained. This could affect "one of the greatest legal cases in the history of transportation accidents".

It has long been a standard agricultural practice to improve the soil by ploughing crop residues under ground. When I worked on a farm in the 1920s, a popular two-year rotation was to sow oats and sweet clover (*Melilotus alba*), cut the oats to leave a high stubble, let the clover grow to about eight inches the next spring, plough it under and plant maize. The benefits of such procedures were rediscovered by the late Mr Jerome Rodale, a New York City electrical contractor who turned to farming. He coined the names 'organic farming' and 'organic food' in 1942, and popularised them extensively thereafter. He said in 1964 that one MD in California "has cured four cancer cases by putting them on a 100% organic diet". Mr Rodale also used a machine called a 'Theramak' for taking electrical treatments to give himself "more electrical energy".

The definition 'organic' in terms of food production was given by Mr Rodale's son in 1972 at hearings before New York State Attorney General Louis Lefkowitz:

Organically-grown food is food grown without pesticides; grown without artificial fertilisers; grown in soil whose humus content is increased by the additions of organic matter; grown in soil whose mineral content is increased by the applications of natural mineral fertilisers; has not been treated with preservatives, hormones, antibiotics, etc.

The uncleanliness of 'antibiotics' to the faithful followers of Rodale seems paradoxical in view of the fact that these organic compounds are produced by moulds. The term 'etc' makes the definition quite elastic. In the hearings, a New York State governmental investigator reported

that a man selling organic fish stated, verbally and on a placard, that it was caught in the pollution-free mineral-rich Atlantic Ocean. One trembles to think of the horrors of

What is organic?



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inorganic fish, but, in any event, 'organic' food is a term coined by Rodale and maintained by his successors and heirs. Its popularity reflects the age-old struggle between reductionism and vitalism. Indeed, the legitimate scientific definition of 'organic' as referring to carbon compounds dates back to the concept that they are produced only by living organisms. This idea was annihilated in 1828 by Wöhler, who made urea from ammonia and carbon dioxide and announced he had synthesised urea "without a kidney, a bladder, or a dog". But vitalism lingers on in the

health food shops where fertilised eggs are sold at a 40% premium because of the "spark of life" imparted by the attentions of the rooster, and it is codified in Oregon, where the Department of Agriculture has issued standards for organic foods, containing "not more than 10% of the allowable residues of any pesticide or other synthetic or artificial substance as established by the FDA". Apparently small amounts of pesticides, like a touch of pregnancy, are permissible. Vitalism has now entered the pages of *Nature*, where we read (12 May) that 'Muck is magic'.

A taste panel at the University of Florida rated a large majority of 'regular' foods as superior to 'health' foods on the basis of "colour, flavour, texture, odour, and general appearance". However, 'organic' foods easily win the cash register battle for their sellers; they cost about 82% more than 'regular' foods in a USDA survey in 1972. Consumers can presumably take spiritual comfort in paying more for lower quality without the possibility of detecting an actual difference by analysis. However, a local case of Q fever is attributed to 'natural fertiliser' used in producing 'organic food'.

When my parents named me Thomas they had not heard the expression "I'm from Missouri", but I believe that they knew of the gospel according to St John, 20 v 24-25. In any case, a doubter I remain, despite Kenneth Mellanby's delight in seeing a headline "Ideas of organic farming being taken more seriously," and his evangelical call to nonbelievers in organic food to repent.