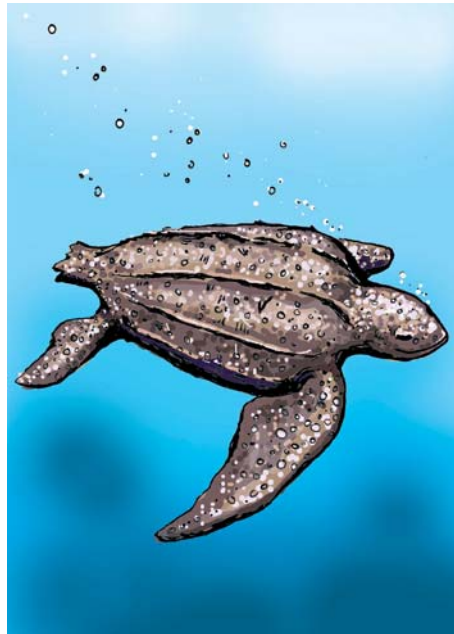


Tracking the travels of the endangered leatherback

Leatherback turtles are creatures that nest on the Atlantic beaches of French Guiana, but the oceanic routes they take during their migrations remain a mystery. However, it is known that the turtle becomes involved with coastal and pelagic fishing fleets combing the Atlantic basin in search of marketable fish. The encounters have critically endangered the leatherback's continued existence, and a group of Swansea biologists has commented upon efforts now being made to determine the travel routes of the turtle, in *Nature* for 3 June.

The investigators believe that closing limited ocean areas to longline fisheries is likely to make only a minor difference to the number of turtles trapped by this technique. This is because the turtles generally restrict their diving to less than 250m, despite the fact that dives as deep as an astounding 1,230m have been recorded. With an average dive, the chance that a turtle will foul longline hooks is substantial. Since the Atlantic is the last stronghold for the creature, and the number of hooks used by the fishers number several millions, the future for the species is dim unless measures can be devised to help it.

It is known that leatherbacks routinely travel long distances and are to be found in the North Atlantic, far from their nesting beaches in the tropics and subtropics. Two individuals tracked in 2002 from the Caribbean travelled mainly eastwards. One approached within 600km of the coast of West Africa and then turned west, while the other travelled to within 1,000km of the coast of South America and remained there for several months. On the other hand, turtles leaving the Caribbean in 2003 travelled northward to within a few hundred



kilometres of Cape Cod and Nova Scotia before turning south, or else travelled north-east to reach sea areas between the Azores and Britain.

Oceanic currents appear to have little effect on their migrations, since turtles swim against, across and with the major currents operating in the North Atlantic. Where they halt is probably determined by the availability of food prey. More than half their time is spent in diving to depths of up to 10m, and more than 99 per cent of dives were shallower than 250m. Very deep dives were rare. Thus, most dives are within the range used by the longline fishermen, and new fishery procedures are recommended to avert the extinction of the turtle.

Isolating US science is a political blunder

In *Nature* for 10 June, Thomas May of the Medical College of Wisconsin argues that the current attempt to defeat bioterrorism by isolating US scientists from those in the rest of the world is a political blunder.

Those who call for scientific restrictions to prevent proliferation of bioterror weapons may find the policy counterproductive. Infectious diseases cannot easily be restricted to any location, region or nation. Although deliberate attacks with biological agents have hitherto been considered to present limited hazard, modern terrorists are perceived to apply rules that exclude rational self-interest. So far as is feasible, therefore, the argument runs, possible weapons should be kept away from potential terrorists. Yet an open academic and educational system offers an important defence, and closed doors will only limit the research and development essential in facing the challenge.

May insists that we must take care to maintain the open nature of our academic systems and avoid placing inessential barriers on the training and education of visiting foreign scientists and medical personnel. Some caution is desirable, but the guarding of scientific expertise must not nullify the need to develop new tests and treatments designed to identify and contain outbreaks of hazardous infections. We cannot control access to expertise in biological weapons through diminishing the availability of scientific knowledge.

He comments that the dependence of science in the US on scientists from elsewhere means that research will be inhibited if the path of scientific isolationism is pursued. "What is required is the proliferation of scientific training worldwide, not scientific isolationism," he writes.

After all, if we understand what we are trying to fight against, we shall be in a better position to bring the countermeasures into play if a threat emerges.

Difficulty of defining the benefits of organically produced food

In the June issue of *Chemistry World*, Maria Burke of St Albans discusses the right and wrongs of the classification of our modern food into "organic" or otherwise. Those who originated the organic concept were prompted by a fear of the many unknown additives and contaminants that result from the pursuit of traditional methods of raising food. Yet it is difficult to specify exactly what an organically produced food can offer that distinguishes it from one produced by conventional farming methods.

Nevertheless, there is a widely shared view that organic products are healthier and tastier than conventional ones, and worth a higher price. The defenders of "organic" insist that it

carries a lesser risk from contamination with micro-organisms such as *Escherichia coli*, since the application of manure during handling is better controlled. It is argued that the use of specially composted manure by organic growers reduces the possible contamination with pathogens.

At the same time, organic growers are bound in general by their regulations to handle compost more responsibly. Mycotoxin, one hazardous contaminant of crops, is claimed by some to be likely to occur in organic products in higher concentrations than in conventional products. However, the United Nations Food and Agriculture Organisation states that

organic farming does not increase mycotoxin content.

There is further contention over the secondary phenolic metabolites present in plants, notably flavonoids and furocoumarins. Organic producers consider that, since these are antioxidants, their higher proportion in organic crops offers added protection of consumers against cancer and heart disease. Evidence to this effect is nevertheless lacking.

The debate continues, and raises great controversy. It is bedevilled by strongly held personal convictions, sensitive political issues and economic considerations. The constructive approach is to eat more fruit and vegetables, duly washed before consumption.