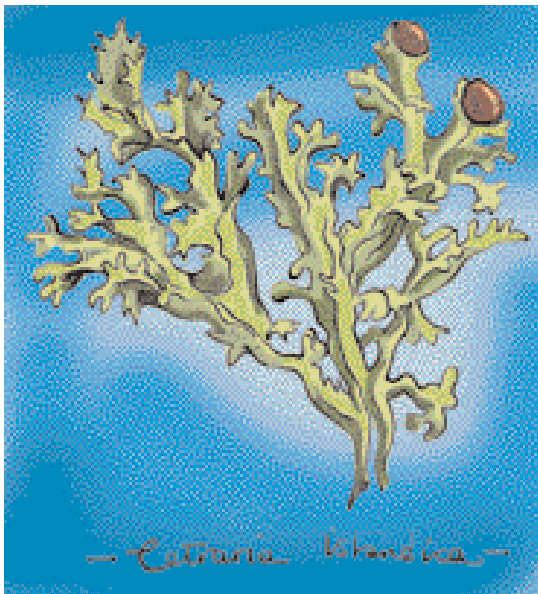


Strange diet

We rarely look upon lichens as possible foodstuffs. Their appearance does not invite us to taste them and, if we do, we find them often intensely bitter. Nevertheless, certain animals living within the world's arctic regions find lichens an important food resort. For example, deer in boreal forests regularly nibble species of *Usnea* growing on conifers, while lemmings consume lichens occurring in the tundra. Caribou (reindeer) turn to species of *Cladonia* and *Cetraria* during the winter months to supplement their regular diet of sedges and willow twigs.

Although forage lichens have been found to possess only low quantities of protein, calcium and phosphorus, insufficient for the needs of Canadian caribou, they may account for two thirds of the regular diet and more than 90 per cent of that under severe winter conditions. In northern Scandinavia the Laplanders practise controlled reindeer grazing, and even harvest some lichen crops. This is made possible because subarctic regions carry vast fields of lichen flora. In a different climate, sheep raised in the Libyan deserts are grazed on the lichen *Lecanora esculenta*, which in places forms a crust on soil and rocks. It is claimed to be the celebrated manna eaten by the ancient Israelites.



In the current issue of *The Lichenologist* is a paper reporting investigations by Norwegian scientists into the nutritive value of terricolous lichens for reindeer in the winter months. Chemical analysis showed low levels of lignin, proteins and water-soluble carbohydrates but high levels of hemicellulose. Most specimens of *Cetraria* contained less hemicellulose than did others of *Cladonia* and *Stereocaulon*, and more sodium and potassium. Moreover, *Cetraria* was more digestible by reindeer ruminal fluid. Lichens are poor sources of nitrogen, and any diet therefore needs to be supplemented from other nitrogen-rich sources.

As regards the human consumption of lichens as food, lichenin has long been the source of gelling additions for soups and bread or porridge. It is traditionally derived from *Cetraria islandica*, the so-called "Iceland moss", in Sweden, Norway and Iceland. This was once popular elsewhere, boiled with milk, for invalids requiring a light diet. The ancient Egyptians used *Evernia prunastri* as an ingredient in bread baking. In general, however, lichens have a very limited place in the animal diet.

Guiding world health

Some degree of consternation seems to have been aroused by the unanticipated decision of Dr Gro Harlem Brundtland to relinquish her position as Director General of the World Health Organization next spring after only a single term in office. It will be the first time that the office has not been held for at least two consecutive terms, and there is naturally some discussion among interested parties over why Dr Brundtland's notably successful progress should be arrested. After being prime minister of Norway she took charge of WHO in July 1998, at a time when the organisation had become ineffective and bureaucratic under the direction of Hiroshi Nakajima, and breathed new life into it.

She herself has said that she is no longer young and wishes to devote more time to family affairs and avoid the relentless pressure of travel. Some in the WHO have laid the blame for her departure on constant criticism and the need to reform so many aspects of the work. Indeed, her relations with the drug industry have resulted in some controversy regarding private versus public funding and the value of partnerships.

But Dr Brundtland has been responsible for great advances in the field of public health and in that of administration. One great advance has been made to reduce the impact of smoking on health, for which she must take most of the credit. Other challenges to commercial interests which she had in mind include the fight against obesity and the harmful effects on children of soft drinks and fast foods.

For her successors, priority attention needs to be directed towards some of the social causes of ill health, notably malnutrition and unsafe water supplies, dietary fads and exposure to environmental toxins. Accordingly, much will depend upon choosing a worthy successor who will not bow to political and commercial interests and will freely express concerns about them whenever they arise. It will be an awesome responsibility.

Unreasonable games

The social impact of gambling is raising its head again at the moment, presumably because of the Government's moves to make casino and betting facilities more widely available. Many people today regard the widening of gambling opportunities and the exposure of young people to temptation as indefensible, since already we live in a distorted world where greed for gain without effort is omnipresent and omnipotent.

The practice of gambling, associated with conceptions of luck, fortune, chance and probability, has its roots far back in human history. Sometimes it has been applied in an inverse sense, in order to pick a victim who would be obliged to carry out some dangerous or disagreeable task that others wished to avoid — the notion of drawing the short straw.

A 17th century proverb tells us that "marriage is a lottery", a cynical and disastrous idea and a false statement to boot. John Dryden in his 1668 "Essay of dramatic poesy" commented: "If by the people you understand the multitude, the *hoi polloi*, 'tis no matter what they think; they are sometimes in the right, sometimes in the wrong: their judgement is a mere lottery." That illustrates his cynicism about lotteries.

William Blake ('Auguries of innocence', 1803) was blunt: "The whore and gambler by the state / Licensed build that nation's fate." And Charles Darwin in 1879 was uncompromising: "Robberies are a natural consequence of universal gambling."

When the National Lottery was established there were criticisms in the medical journals that it threatened the nation's health. The development of "lottery fever" and the increase in pathological gambling habits might well indicate a state akin to drug dependency. Its prime cause, went the argument, is a person's inability to reason logically or statistically. After all, it is obvious that those who organise lotteries and other gambling facilities make fortunes while their victims lose much of what they venture. The fact that national treasuries can derive an income from gambling habits is a powerful influence in encouraging state lotteries, in the same way as consumption of alcohol and tobacco, though well recognised as a health hazard, enriches the Treasury through taxation and advertising.

It is interesting to note that, according to the journal *Addiction* this year, some two thirds of gamblers seeking treatment from physicians are also regular daily cigarette smokers. Studies are under way to determine whether the addiction to tobacco and other smoking materials adversely affects measures to cure that other pathological addiction, gambling. All the indications at present are that gambling, like alcoholism and smoking, must be regarded as a true addiction, and as such a menace to both physical and mental health.