

Equal opportunities for women in science

In *Science* for 19 August there is a discussion by a group of academics in the US on the progress being made, slowly but surely, in ensuring that more women are represented in the field of science. The authors point out that it is 25 years since the US Congress passed an equal opportunity act stating that it was "the policy of the United States that men and women have equal opportunity in education, training and employment in scientific and technical fields". Since then there have been major advances, but academic institutions are still not using the resource of women scientists they have trained.

Much has been discussed about the possible biological differences between men and women that might affect their representation in science. The evidence indicates that overall intelligence is no different in the two sexes, but there is disagreement over the specific aspects of cognitive ability that might differ between them. Successful scientists require deductive reasoning abilities, verbal skills,

ability to reason quantitatively, intuition and social skills. Yet there are different approaches and styles in science that are no less successful than others.

Innate ability, on the available evidence, does not limit the ability to practise a scientific pursuit. Over some three decades the number of PhDs granted to women in engineering increased 30-fold. Attitudes and laws pertaining to gender changed dramatically during the same period.

There are moral and legal imperatives to ensure equal opportunities. More than this, university studies have shown that working groups design more innovative solutions to problems if they are heterogeneous rather than homogeneous. And institutions that welcome women produce more favourable working environments than those that operate a bar of some degree.

Some women scientists may not pursue an academic career because they are discouraged from doing so, not because they are incapable. Some, during their junior status, are side-

tracked into institutional social organisation rather than pursuing a career advancement.

Many women who abandon academia are conscious of hostility from colleagues and a chilly perception on the campus. Exclusion from the departmental community and its decision-making processes may induce a sense of isolation that is vastly discouraging to a woman who already senses antagonism or ridicule in her environment. Discrimination is often unconscious and unintended, though harmful just the same. Awareness of a situation can counteract the effect of bias, whether conscious or unconscious. Pressure on time is unhelpful and adds to the tension.

Finally, there is the balance between work and the caring for a family to be considered. Responsibility for children and ageing parents falls disproportionately on women. Conflicts between personal and professional life call for special counselling if they are to be resolved successfully. Improvement requires a vigilant and widespread campaign for a bolder attitude to the problem of women in science.

Nutcrack Night has come round again

The eve of the Feast of All Saints in the Christian calendar has been called names such as Nutcrack Night and Hallowe'en, and is celebrated on 31 October. It used to be venerated as the eve of Samhain, an ancient Celtic festival, and was the last day of the year in the ancient calendar. During that night it was generally believed that witches, warlocks, ghouls and other evil creatures were abroad looking for mischief.

There is a tradition of many local customs to mark the feast, most of them innocuous though fantastic. Nuts were roasted and consumed with due rituals that forecast future marriage partners. Apples featured prominently. They were floated in bowls of water or suspended from strings while participants tried to bite them. The peel of an apple, in a continuous strip, was thrown over the left shoulder and its shape when it landed indicated the name of a lover. Plucking kale from the ground or picking a stalk of oats also offered omens. Hemp seed was cast abroad with the same object. Bunches of straw were lit and carried round the local fields.

In Herefordshire at Hallowe'en a number of ivy leaves corresponding to members of the family were floated in a bowl of water overnight, and in the morning any leaf



bearing a mark resembling a coffin foretold the coming death of the person represented.

In Scotland in the 18th century the people of Strathspey made loops of cutting from the rowan tree through which their sheep and lambs were passed morning and evening to ward off evil spirits. More recent ceremonies included processions of local people dressed in ghoulish costumes carrying lighted candles in hollowed pumpkins.

Today we have witnessed a custom of American origin in which children wander from house to house knocking on doors and threatening to play tricks on the inmates unless they are given sweets or other delicacies. Indeed, this development has been condemned as debasing the idea of a traditional celebration, but it continues in some places.

Is chocolate a food or a medicine, and why?

An editorial in *The Lancet* for 20 August asks whether eating chocolate prevents or relieves cardiovascular and cerebrovascular disease or whether the many calories and the high fat and sugar content do more harm to the consumer than good.

Many studies of the effects of flavanols in cocoa have yielded conflicting results and it cannot be held beyond doubt that chocolate is good for you. Even the manufacturers of the sweetmeat are unable to make a foolproof case for their product, despite research reaching back more than 15 years. The one result seems to be that synthetic flavanols made from crude cocoa may have a place as prescription drugs.

Flavonoid-rich products such as red wine and tea have shown that in high doses those constituents may be associated with a low risk of coronary heart disease and stroke. The possible role of cocoa is difficult to define. Its flavanols produce antioxidant effects, reduce platelet aggregation and enhance endothelial function, but there are wide variations in flavanol content of chocolate, depending on the details of processing.

Few chocolate-based confectionery products contain doses of flavanols likely to confer any health benefit. Dark chocolate is probably better than milk chocolate and certainly better than white chocolate, but cocoa-rich foods need to be developed and tested for their flavanol effects before any clear benefit can be attributed to them.