

will be covered by a simple blood test, brain scan or fingerprint analysis?”, “Will it be possible to predict the future sexual orientation of a child or even of a fetus?”, “Will the technology become available that can change a person’s sexual orientation, or future orientation, by some form of brain engineering or genetic manipulation?” and “If any of these developments do become reality, will they be used for good or ill?”. LeVay is not afraid to take a provocative stand. He does not believe that there should be legal prohibition of the use of genetic or neurosurgical techniques to alter sexual orientation, were such technology to become available. His guiding principle is simple: everyone has the right to life, liberty and the pursuit of happiness, so long as they do not infringe the rights of others. To clarify his position he draws a parallel with sex-reassignment surgery. An important question is whether science and society have procedures in place to minimize the dangers of such a liberal guiding principle. Good books such as this might certainly help — provided that we can find a way to persuade people who are not gay-friendly to read them. □

Dick F. Swaab is at the Netherlands Institute for Brain Research, Meibergdreef 33, 1105 AZ Amsterdam ZO, The Netherlands.

When botany became no work for a lady

Londa Schiebinger

Cultivating Women, Cultivating Science: Flora’s Daughters and Botany in England 1760 to 1860. By Ann B. Shteir. *Johns Hopkins University Press: 1996. Pp. 301. \$29.95, £22.50.*

HISTORIANS have tantalized us with the notion that botany was for a time considered a ‘feminine’ science. Here, finally, the Canadian historian of science Ann Shteir tells in detail how women ‘elbowed’ their way into botany at the end of the eighteenth century only to be ‘elbowed out’ again by the mid-nineteenth century.

According to Shteir, women botanists flourished in England from 1760 until 1830. How was this possible? As with many of the sciences in this period, botany was a widely appreciated amateur pursuit, fashionable among cultivated ladies and gentlemen. As long as botany remained an enriching pastime, women were welcomed as fellow enthusiasts.

In addition, botany posed no threat to orthodox views on women’s nature: a rose was said to mirror the beauty of its feminine devotee; exotic plants were said to



A RARE blue iceberg lying just off Coronation Island, one of the South Orkney Islands. In *Antarctica*, Mike Lucas provides an authoritative account, accompanied by 300 colour photographs, of this continent’s scientific, economic and ecological importance. New Holland, £29.99.

prefer delicate female nurturing; the female mind and body were encouraged to thrive on the rational pleasures botany afforded. Plants had long belonged to women’s domains: peasants and aristocrats alike had worked as healers and wise women, gathering and cultivating the plants required for domestic medicines.

For a variety of reasons, then, by the end of the eighteenth century, botany among all the sciences was, according to the French philosopher Jean-Jacques Rousseau, considered least offensive to women. Botanists revelled in nature’s verdant glory, while anatomists faced oozing blood and stinking cadavers, geologists dirt and filth, and entomologists their vile insects.

All this was to change as the amateur botanophile was replaced by the professional botanist. Shteir tells how, between 1830 and 1860 in England, the aristocratic ideal of polite knowledge embellishing an aesthetic, moral and spiritual sense of personal well-being gave way to a utilitarian ethic of practically useful science; how observational and field traditions in natural history succumbed to laboratory-based research; and how even textbooks turned from formats favouring lively and personalized conversations to those more formal and technical in tone.

As in other fields, professionalism was accompanied by a strident ‘defeminization’. John Lindley, the first professor of botany at the University of London, declared: “It has been very much the fash-

ion of late years to undervalue the importance of this science, and to consider it an amusement for ladies rather than an occupation for the serious thoughts of man.”

Shteir mentions several times that botany at the turn of the nineteenth-century was “dominated” by women. When women become prominent in surprising places, it is tempting to see them as dominant. But, according to Shteir’s own account, women botanists were restricted in their activities — even at the height of their influence.

Lady Charlotte Canning, for example, served as an active collector from as far away as India. Had she been a man she might well have gone on a grand expedition in search of exotic specimens. As it was, she collected as a sideline to her main occupation, that of colonial wife, travelling where her husband happened to take her.

Women did, however, serve as influential patrons. Margaret Bentinck, the Duchess of Portland, commissioned naturalists to send her specimens from around the globe to add to her massive collection at Bulstrode Park. Women also served as illustrators, popularizers and educators. Priscilla Wakefield’s *Introduction to Botany* (1796), for example, led the field for two generations.

Women’s work only occasionally reached learned journals. Carl Linnaeus’s daughter, Elisabeth Christina, published her observations on the phosphorescent effect on nasturtiums in the *Transactions of the Royal Swedish Academy of Sciences*.