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Pitcairn islanders, all descendants of the mutineers of HMS *Bounty*, in front of the *Bounty's* anchor. The mutiny occurred in 1789, and after setting Captain Bligh and others adrift the remaining nine crew members sailed to Pitcairn. There they settled, and remained undetected until 1808.

turtle population was overharvested. Mangareva's human population survived but descended into an orgy of war and cannibalism that made continuation of trade with Pitcairn and Henderson untenable.

After contact with Mangareva and Pitcairn came to an end, Henderson islanders continued to survive in isolation for about 150 years, or some six generations. Without any volcanic stone as raw material, they learned to fashion adzes from giant clam shells, ovenstones from limestone cobbles and fishhooks from inferior local pearlshell. But without trees large enough to build canoes for open-ocean voyaging, the islanders had no means of getting in touch with the outside world. At some point around AD 1600 the last humans on both Pitcairn and Henderson died.

Why did the populations die out? Speculation on that question can be informed by what happened in similar situations in modern times. Eventually, no potential marriage partners could have remained who did not violate incest taboos, as in the case of California's last four Yahi Indians<sup>4</sup>. Deleterious effects of inbreeding may have appeared before that, as seen for the Pennsylvania Amish, the inhabitants of Swiss mountain valleys, and many other isolated human populations. Climatic fluctuations in an already marginal environment may have driven the islanders to starvation, as happened to Japan's garrison stranded on Wake Island during the Second World War. The people of Henderson may have responded to that threat by murder and cannibalism, like so many human groups under similar conditions: Mangareva Islanders, Easter Islanders<sup>5</sup>, and California's notorious Donner Party of pioneers<sup>6</sup>. And the islanders may have become insane from social deprivation, as happened to members of the Belgian Antarctic Expedition trapped by ice for over a year<sup>7</sup>.

Michael Brooke

Even had the islanders somehow avoided all of these fates, they would still have run up against the problem that 50 people are too few to constitute a viable human population. All plant and animal species have so-called minimum viable populations for demographic reasons<sup>2</sup>. Minimum viable populations must be especially large for gregarious species, whose social structure is essential for reproduction and cultural transmission. Humans are such a species. Studies of human populations stranded in the midst of plenty on Flinders, King and Kangaroo Islands show that even a society of sever-

al hundred people is insufficient to propel human culture indefinitely<sup>8,9</sup>. Greenland's Norse population became hopelessly conservative, refused to adopt the successful subsistence methods of their Eskimo neighbours, failed to invent equivalent methods themselves, and died out within a few generations of the visit of the last ship from Norway<sup>10</sup>. Aboriginal Tasmania's 5,000 inhabitants did survive in isolation for ten millennia; but they abandoned such useful practices as bone-tool manufacture and fishing, and failed to invent the spearthrowers and other devices developed on the Australian mainland<sup>9</sup>.

Today, as hundreds of years ago, the Pitcairn islanders' well-being depends on contact with the outside world, as the remaining 56 descendants of the *Bounty* mutineers look increasingly to supply ships from New Zealand for sustenance in the form of canned and frozen food, and for culture in the form of videos. But to paraphrase Rhys Jones's comment about the Flinders islanders, small societies may die out not only from a lack of food, but also from a lack of people<sup>8</sup>. □

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DAEDALUS

## Sex in the head

ARE men and women equally bright, or bright in the same way? One school of thought holds that men and women are identical in all respects, or if they aren't they should be, and we must appoint women extensively to scientific, technical and military jobs to prove how earnestly we believe it. Another school claims that feminine intuition is at least as valid as masculine logic, and that feminist sciences and mathematics should be set up to compete with the male varieties. Daedalus now proposes a crucial test. He plans to abolish testosterone from the male brain.

Testosterone, the male hormone, gives men their male physical and putative mental character. It is claimed to underpin their interest in conquest and mastery — of women, rivals, materials and territory. Science, for example, is the conquest and ownership of intellectual territory (which is why priority squabbles between scientists are so bitter). Daedalus wants to stop testosterone crossing the male blood-brain barrier, and see what happens.

To pass this barrier, testosterone has to escape from the big protein molecules that normally carry it. So DREADCO's biochemists are injecting a special coupling agent into the bloodstreams of male volunteers. It binds testosterone firmly to its protein. The hormone still gets round the body, maintaining male physique, beard growth and so on. But it loses all access to the brain.

A man on DREADCO's 'Neuterminde' will still be completely male. But his brain won't know it. He will be unaware of sexual desire or competitive challenge. Only direct physical assault will arouse him to sex or aggression. He will then react by blind, spinal-cord instinct — thus revealing what these basic human instincts are. Afterwards he will truly 'not know what came over him'. But Daedalus is most interested in his volunteers' mental life. Freed from the burdens and biases of manhood, will they develop childlike insights and subtle illogical intuitions? Will they find feminist algebra suddenly convincing? Most interesting of all, will their scientific creativity blossom or fade? Freud, who saw both art and science as sublimated sexuality, would predict the latter. Without the spur of testosterone, he would say, they simply won't bother to go looking for trouble, mental or physical.

Neuterminde could be useful too. As a depot drug, it should turn male criminals into placid, unadventurous citizens. And it would be the perfect way to tell art from pornography. Take a dose of Neuterminde, and if it's still interesting, it's art.

David Jones