

# CURRENT SCIENCE

Volume 85 Number 3

10 August 2003

## EDITORIAL

### Population

*'I think I may fairly make two postulata.*

*First, That food is necessary to the existence of man.*

*Secondly, That the passion between the sexes is necessary and will remain nearly in its present state. . . .*

*Assuming then my postulata as granted, I say, that the power of population is indefinitely greater than the power in the earth to produce subsistence for man.*

*Population when unchecked increases in a geometrical ratio. Subsistence increases only in an arithmetical ratio. A slight acquaintance with numbers will show the immensity of the first power in comparison of the second.'*

Thomas Malthus

*An Essay on the Principle of Population* (1798)

*'A struggle for existence inevitably follows from the high rate at which all organic beings tend to increase. Every being, which during its natural lifetime produces several eggs or seeds, must suffer destruction during some period of its life, and during some season or occasional year, otherwise, on the principle of geometric increase, its numbers would quickly become so inordinately great that no country could support the product. Hence, as more individuals are produced than can possibly survive, there must in every case be a struggle for existence, either one individual with another of the same species, or with the individuals of distinct species, or with the physical conditions of life. It is the doctrine of Malthus applied with manifold force to the whole animal and vegetable kingdoms; for in this case there can be no artificial increase of food, and no prudential restraint from marriage. Although some species may be now increasing more or less rapidly, in numbers, all cannot do so, for the world would not hold them.'*

Charles Darwin  
*Origin of Species*

*'Coercive measures are often advocated for reducing fertility rates in the poorer countries. . . . The point is sometimes made that in a poor country, it is a mistake to worry too much about the unacceptability of coercion—a luxury that only the rich countries can afford. It is not obvious what this argument is based on. The people who suffer most from these coercive measures are often among the poorest and least privileged in the society. The regulations and the way they are operated are also particularly punitive with respect to women's exercise of reproductive freedom. . . . Since the advocacy of coercion, in different forms, has been growing in India, it is important to emphasize that it achieves little and destroys a lot. . . . Coop-*

*eration can contribute something that coercion cannot provide.'*

Amartya Sen

'Population Policy: Authoritarianism versus Cooperation'

Lecture, New Delhi

17 August 1995 (<http://www.macfound.org>)

*'In demographic terms, the population explosion is a numbers equation, birth rate decline lagging behind a fall in death rate. But in terms of historical action, the population explosion is the unequal diffusion of the two technologies of death control and birth control. One element, probably the most important, in this inequality stems from broad societal attitudes towards human reproduction. In the last analysis, it seems to be attitudes among decision makers and elite members of a society as they relate to the availability of choices, rather than attitudes among the world's contemporary millions, that still slow the repairing of the mistakes.'*

Malcolm Potts and Martha Campbell

'History of Contraception'

*Gynecology and Obstetrics*, 2002, vol. 6, ch. 8

India entered the new millennium with a population exceeding one billion. Malthusian fears of famine and food shortages seem to have been banished by the fruits of the Green Revolution. In the 1960s, when I first heard of Malthus in an undergraduate economics class, India's population was a little over half the present number, but famine, food imports and PL-480 were everyday words. The transformation of agriculture consigned Malthus to the seminar rooms of academia. In his 1995 lecture at Delhi, Amartya Sen traces the origins of the 'analysis of the population problem' noting that the Marquis de Condorcet had preceded Malthus in worrying about the consequences of increasing populations: 'When the increase of the number of men surpasses their means of subsistence, the necessary result must be either a diminution of happiness and population, or, at least, a kind of oscillation between good and evil. In societies arrived at this term, will not this oscillation be a constantly subsisting cause of periodic misery?' Unlike Malthus, Condorcet was an optimist, who saw that solutions to the problems created by burgeoning populations would emerge from 'a cooperative response through the reasoned agency of the people themselves'. Condorcet's view seems to have been vindicated, as voluntary family planning has completely

eliminated population growth as a threat to national economies in the developed world. Malthus' famous essay did however, contribute significantly in shaping Darwin's evolutionary synthesis; biology on a broad front may follow Malthusian dictates, humans, possibly, being an exception.

In reflecting on the voluntary control of population it is instructive to recall that birth control measures were publicly discussed in England, only several decades after Malthus wrote his essay. In 1877, Charles Bradlaugh and Annie Besant republished Charles Knowlton's strangely titled book, *The Fruits of Philosophy* (originally published anonymously in 1832). Knowlton provided the first explicit prescriptions for birth control. The government prosecuted the publishers; the Bradlaugh-Besant trial, which ended in their acquittal, legitimized public discussion of birth control. Annie Besant (1847-1933) was to go on, in a remarkable career, to become the President of the Indian National Congress in 1917, a champion for 'Home Rule' and self government in India. The publicity that attended the prosecution of Bradlaugh and Besant drove the sales of Knowlton's family planning booklet from 'fewer than 1000 a year . . . to more than 100,000 in the three months preceding the trial'. Annie Besant later wrote her own book, *The Law of Population*, which she dedicated to 'the poor in our great cities and agricultural districts, dwellers in stifling courts or crowded hovels, in the hope that it may point a path from poverty and may make easier the life of British mothers' (Potts, M. and Campbell, M., *Gynecology and Obstetrics*, 2002, vol. 6, ch. 8). In a sympathetic article on Besant's 'many lives', Kumari Jayawardena notes that even before her 'Indian phase', which began in 1893, Besant had cited India in her book 'as an example of overpopulation' (*Frontline*, 1997, 14, No. 20). At that time our country's population would have been less than a quarter of what it is today. Birth control became an acceptable subject for discussion in the United States largely through the efforts of Margaret Sanger (1879-1965). In a striking throwback to the days of Besant, Sanger was prosecuted in America in 1914 for publishing a pamphlet called *Family Limitation*. She fled briefly to Europe but, when the government of the day withdrew its charges, returned to open 'America's first birth control clinic in Brownsville, New York', in October 1916. Several decades later, Sanger, along with Katharine McCormick, was instrumental in inducing Gregory Pincus to develop synthetic progesterone analogs as oral contraceptives, at the Worcester Foundation for Experimental Biology in the early 1950s. The application of progesterone as an anti-ovulant coincided with the remarkable flowering of the chemistry of steroids. The pace of development of the 'birth-control pill' and its rapid acceptance in the West is unlikely to be matched by any pharmaceutical product today.

Family planning and birth control were high on the government's agenda in the 1960s and 1970s, but the coercive strategies of the mid-1970s, notably under the cover of the 'Emergency', backfired, setting back population control in many poor states by several years. As Amartya Sen notes: '. . . The assembling of poorer women in sterilization camps through various kinds of pressures, is a prac-

tice of remarkable barbarity and injustice. . . (V)oluntary birth-control programmes in India received, as family planning experts have noted, a severe setback from that brief programme of compulsory sterilization, since people had become deeply suspicious of the entire family-planning movement. Aside from having little immediate impact on fertility rates, the coercive measures of the emergency period were, in fact, followed by a long period of stagnation in the birth rate, which ended only in 1985'. Coercion, persuasion, education, inducements, penalties, legislation and economic uplift have all been viewed as instruments of population control. Medical science has provided the means of birth control; the more difficult task of spreading the virtues of the small family norm remains to be accomplished. According to present projections, India will overtake China as the most populous country on Earth in the early decades of this century; a distinction that is hardly a cause for celebration. The recent decision of the Supreme Court upholding a Haryana Government law prohibiting a person from holding a 'Panchayat' post if he or she had more than two children has once again sparked discussion. Laws regulating politicians and lawmakers are hardly likely to make any impact and only serve to divert attention from the central issue of evolving and implementing purposeful strategies for limiting overall growth rates and improving economic conditions for the poorest sections of the population.

Does science still have a frontline role in the area of birth control? Is there a case for the much touted 'contraceptive vaccine' of the 1970s? Immunocontraception, targeted primarily at women, was a highly funded research activity in India in the period between the 1970s and 1980s. The projects floundered; mired in both scientific difficulties and worries about public acceptability. Funding agencies began to seek a way out in the 1990s, with a committee report setting the stage for discarding all talk of 'birth-control vaccines', accepting 'the concerns expressed by some women's groups and by individual analysts, that immunocontraception will not prove to be a biomedically appropriate contraceptive option for women in general and that research and development investment in the area would be better placed elsewhere'. A review of the area concludes rather sombrely, 'immunocontraception itself may not have a place of its own in the fertility control programme at the moment' (Rao, A. J., *J. Biosci.*, 2001, 26, 425).

Although Malthus highlighted food as the most important ingredient for survival, his postulates must, of course, be enlarged to encompass many biological and natural resources. Overpopulation and unrestrained consumption to maintain unsustainable lifestyles are likely to lead to a catastrophic situation in the future. Natural resource depletion is directly linked to human activity. Food, water, energy and ecological damage must be of major concern to policy makers, who face the daunting task of balancing the aspirations of growing populations with the constraints of limited resources. We live in a far-from ideal world and it may be impossible to exorcise the ghost of Malthus.

P. Balaram