

the sperm and the egg, and the failure of the vast majority of gametes to fertilize is never invoked in arguments about the few which do and the mechanisms they seem to use. Similarly, the enormous variety of mRNA elaborated by the oocyte's diploid (maternal) genome and stored in mysterious ways for use by the cleaving embryo is explained as the proximate mechanism to supplement the mRNA-synthetic abilities of the single zygote nucleus, in the immense egg cytoplasm, until such time as the nuclei have multiplied. Surely the theoretical importance of early development being controlled by maternal genome, only mentioned by Monroy, could have been expanded somewhere? The titles of the individual reviews often promise such a general approach — "Nucleo-cytoplasmic interactions . . .", "Activation of DNA synthesis . . .", "Regulation of mammalian spermatogenesis", "Vertebrate sex determination" — but each focuses down on one problem and doesn't usually generalize in the Discussion section either; there are too many "More work is needed before meaningful generalizations . . ." conclusions. If this is so, then this is not the time to review that subject.

The reviews seem mostly to have been written in about 1981, and to have been updated in 1983–1984; later references are nearly always to the author's own work. This is inevitable in such a grand compilation, but it makes the previous criticisms much more serious. Generalities, indeed prejudices, of workers of this eminence will usually keep their interest for

some years, but these minor issues lose immediacy much sooner. Particularly unfortunate in this context is the absence of the inositol triphosphate (IP₃) story of 1984, which provided a new second messenger with close affiliations to the cell membrane; it rendered incomplete nearly all of the controversy about Ca⁺⁺, much of that about membrane receptors of egg or sperm, and all of that about phospholipid involvement in sperm maturation. An attempt by Whitaker and Steinhardt to make good this particular deficiency by way of an addendum to their Chapter 5, printed at the end of Vol. 3, only succeeds in emptying this can of worms among all the other contributors: tangled discussions of cytoplasmic pH, Na⁺/H⁺ exchange and egg activation/cortical reactions, and even the bindin story, are shown to have been incomplete, needing identification of this crucial thread. If theories had been proposed, IP₃ would have added mechanism; as it is, for most of the articles subsequent discovery invalidates much of their content.

There is certainly a place for this collection in university libraries, and even in the more specialized collections of directors of (rich) *in vitro* fertilization units, while individual articles will be very valuable, especially for research students. But what a pity it is that they will miss the real expansion of mental horizons which we gained from the first edition. □

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Products of history

Janet Browne

Seeds of Change: Five Plants that Transformed Mankind. By Henry Hobhouse. *Sidgwick & Jackson: 1985. Pp.245. £15. To be published in the United States later this year by Harper & Row.*

POTATOES are not usually given much thought beyond the kitchen table, yet in Henry Hobhouse's *Seeds of Change* they take on a starring role. Rightly so, for these humble tubers have had a dramatic part in world events. The blight of 1845 meant nothing less than starvation for the Irish nation; economic crisis erupted in Britain, forcing rapid tax reform, repeal of the Corn Laws and a temporary halt to restrictive trading practices; and on a larger scale, one more wave of hopeful settlers emigrated to the United States where they then went on to become a recognizable force in the shaping of modern America.

There are other plants, other commodities that have changed the course of his-

tory and, of these, Hobhouse selects a further four to illustrate his general theme that plants matter more than one might think. Sugar cane in the West Indies, a crop supported by an economic and social superstructure of plantations and slavery, was, by his account, responsible for the infamies of the slave trade and for nearly half of all the seagoing effort, naval and civil, of western European countries before 1830. It gave Britain commitments in the Caribbean that Hobhouse feels she could well have done without (and an irredeemably sweet tooth). Cotton, on the other hand, made the American south rich and confident. This too was a cash crop based on slavery, contributing to a lifestyle that was ripped apart by the Civil War and yet, ironically, feeding the first great industrial revolution with raw material for newly mechanized processes of textile production.

Then there is tea. The British tea trade with China during the eighteenth century heralded not only imports of porcelain ("china"), opium and redesigned "clipper" ships, but also a fight for economic supremacy with the Dutch East India Company, encouraging Britain to concen-

trate primarily on India, and the opium wars of 1840–1842 that finally opened up two British footholds in China — Shanghai and Hong Kong. Last of all, although first in his book and undoubtedly Hobhouse's most interesting chapter, there was the hunt for quinine, the bark of a South American tree which prevents and cures malaria, thereby allowing the opening up of great tracts of central Africa and India to European colonial powers.

There is much here that will be fresh, surprising and intriguing to most readers whatever their background. The stories of these staple products are extraordinarily rich, containing within them all kinds of repercussions that echo through to the

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Wartime exhortation in the Daily Express of 18 January 1943. The cartoon is reproduced in the revised impression of The History and Social Influence of the Potato by Redcliffe Salaman, which has been edited and is introduced by J.G. Hawkes. Publisher is Cambridge University Press, price is hbk £35, \$49.50; pbk £12.50, \$16.95.

present day. But for professional historians, perhaps for scientists too, the book is hampered by Hobhouse's all-pervading sense of moral outrage at the activities of our ancestors, and his implicit assumption that things are better now. Perhaps his forthcoming sequel (on corn, oil and wine) will be less Anglocentric and less judgemental. Many readers will surely wish for something more of an analysis of the actual causes involved in, for example, the colonization of India; the ability to control malaria through quinine, critical as it may have been, is hardly a reason for India's emergence as the jewel in the British Crown, any more than it is an explanation for the scramble for Africa. Hobhouse's breezy good sense is no match for the deeper causes lurking here. □

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