

The turn-around in the direction of the pressures, proposed by Ester Boserup, is stimulating and attractive although it leaves the causes of population growth in darkness, almost as a natural law of human history.

In a relatively short book of such a wide scope the evidence to support the thesis is inevitably condensed and the statements sweeping. Readers with a specialist knowledge of particular topics are likely to find assessments which do not take account of the most up-to-date research; the publications relied upon are not always the most reputable. For example, the discussions of the basic demography of the biosocial determinants of fertility and mortality, which are of critical significance for the reversal of the older views on the direction

of the relation between population growth and technological change, are surprisingly weak in depth of knowledge and citations of relevant research. Nevertheless they are sensible and only marginally misleading.

This is an exciting book, full of ideas which are provocative because they are unconventional and yet plausible. One of many possible examples is the examination of the minimum population densities needed for the development of urbanization at the relevant stage of technology. There is undoubtedly much to criticize in detail, but only by studies of this kind can the essential broad syntheses be achieved. □

*William Brass is Professor of Medical Demography and Director of the Centre for Population Studies at the London School of Hygiene and Tropical Medicine.*

## The doctor of revolution as letter writer

Gavin Bridson

*The Letters of Erasmus Darwin.* Edited by Desmond King-Hele. Pp.363. ISBN 0-521-23706-8. (Cambridge University Press: 1981.) £45, \$95.

THAT remarkable polymath, Dr Darwin, has been singularly fortunate in having such a loyal admirer in Desmond King-Hele who has stayed beside his hero for some 20 years. His introduction to *Erasmus Darwin* (1963), followed by *The Essential Writings* (1968), *Doctor of Revolution* (1977), introductions to reprints of Darwin's *Botanic Garden* and *The Temple of Nature* (1973), and articles in *Nature* and elsewhere, all demonstrate this loyalty. His high regard for the amiable, versatile and near perfect eighteenth-century genius is no secret. In *Doctor of Revolution* he declared

Though I may be biased, I regard Erasmus Darwin as the greatest Englishman of the eighteenth century. If you disagree, can you name anyone else in the past 250 years with a list of accomplishments so numerous, so notable and so varied?

These he summarized in a list of 75 achievements which included such unsuspected topics as abolition of slavery, air travel, biological pest control, copying machines, oil drilling, rocket motors, speaking-machines, submarines, water closets and women's lib. He optimistically added that

The flow of specialised articles in journals has been increasing, and, if the momentum continues, we may yet see Darwin receiving the kind of scholarly attention that has been lavished on lesser figures like Boswell or Horace Walpole.

A glance at the *Isis* bibliographies shows that the flow has not been so great and that King-Hele's writings still provide a major

tributary. Little surprise, then, that he himself should edit Darwin's letters.

After a wide search for manuscripts in Britain and the United States, King-Hele believes that he has located the great majority of surviving letters and that this "provides a balanced and reasonably complete picture of Darwin the letter-writer in all his moods". For a man whose published writings ran to a million and a half words it is disappointing to find that the picture is composed of only 272 examples written between 1749 and 1802. No guess is made as to the likely quantity that may once have existed. We find that Boulton, Watt and Wedgwood kept 103 letters between them, and his grandson, Charles, quoted from 30 out of a collection that has not survived in manuscript. We must be grateful that as many as 88 other recipients make up the rest, that they spread over all but a handful of Darwin's 50 or so adult years, and that they reflect so much of the man and his achievements — for about half of King-Hele's list of 75 are apparently touched upon here. 187 letters survive in manuscript (162 in Darwin's own hand) and the rest are taken from published sources.

King-Hele has developed a meticulous editorial apparatus for the treatment of the chronologically presented sequence. Each letter is printed without the inclusion of any editorial distractions, according to his stated rules for transcription. Passages of some length are omitted in a few instances where these amount to an inserted "paper", such as details of Darwin's polygraphic machine and instructions on landscape drawing which have been removed from two 1779 letters. However, it is particularly pleasing to have facsimiles of the numerous sketches by means of which Darwin illuminated his observations, ideas and inventions.

The editor's notes fill the spaces between the letters, and *fill* they sometimes do — 18 separate notes on a letter to Watt, and 100 lines of small-type notes on a 12-line letter to Joseph Banks. With a modest number to work on, King-Hele has been able to examine each letter under a powerful lens and reveal minutiae that might escape even the attentive reader's eye. Twenty years' research have brought him to an intimacy with his subject that could scarcely be equalled on the basis of surviving records, contemporary comment and astute interpretation. A dazzling breadth of erudition is woven into the fabric of his scores of enthusiastic and revealing notes. No stone, it seems, remains unturned and one admires his ability to meet the demands that the wealth of Darwin's ideas and activities has placed on him.

Precise information on the source, previous printings and text used for transcription, accompanies each letter, together with notes on the recipient, the date of the letter, explanations of obscurities and identification of people, places and things. A handbook on Darwin's life and times could be assembled from such detailed, well informed and bibliographically replete commentaries. Their biographical content alone is remarkable, for which the assistance of Hugh Torrens is acknowledged.

Fortunately for the reader, studiously careful guidance to all this scholarship is provided by means of name and subject indexes, a chronology, list of recipients and a gallery of 48 portraits, all the product of much thought and time. In fact the body of the text is so replete with editorial matter that it makes for slow reading if one progresses through letters and notes in turn.

As we have come to know from many previously published extracts, Darwin's letters are extremely engaging and entertaining reading, vividly reflecting his moods, interests, personal relations and doings. One really must read through runs of letters by themselves to get their flavour and then retrace one's steps for the additional pleasure of King-Hele's commentaries. Some of the letters are frankly dull, dealing with pedestrian business matters, and but for the overall scarcity of his correspondence might not have been included or accorded such reverential treatment. But most are packed with interest, varying from light-hearted banter to grave formality, and including verse, poignantly expressed sentiments, highly detailed technical descriptions, comments of immense foresight and wisdom, and reflections of his endless vigour, excitement with life and overwhelming good nature — in short, all that his biographers have taught us to expect. □

*Gavin Bridson is Librarian and Archivist to the Linnean Society of London, and joint compiler of Natural History Manuscript Resources in the British Isles (Mansell, 1980).*