

## Book Reviews

divergence of the two disciplines and Sander with their reconciliation in developmental genetics. Allen summarizes much of the work on this subject and speculates that American breeding interests were responsible for providing impetus for the separation. He states that "the dichotomy between embryology and genetics was inevitable" and that Morgan was the "unplanned agent" of this separation. Sander's analysis of both past and present attempts at reconciliation start at the opposite conclusion: "This strict separation of disciplines—one studying transmission, the other the expression of heritable traits—may have contributed to scientific progress for a time, but it is by no means a requirement imposed by Nature herself . . . . Aloof from these haggings stood Edmund B. Wilson and his *Cell*. Its first two editions (1890, 1900) antedated the schism and, if heeded by the opponent parties, might have suppressed it from the beginnings." Sander also describes contemporary research that bears upon one of the most important conceptual undertakings of modern developmental biology: relating differential gene activity to the generation of pattern. Another contemporary developmental geneticist, Eric Davidson, shows briefly how modern research is indebted to the principles established by Theodor Boveri, and Edward Yoxen looks at the relationship of genetics and embryology as seen in the career of C. H. Waddington. Robert Olby, looking at a similar period, identifies three research programmes (colloid chemistry, histochemistry, and X-ray crystallography) to study structures existing between the ultramicroscopic and molecular size ranges of the cytoplasm.

Witkowski, Wallace, and Wolpert detail the history of the "form-problem" from R. G. Harrison onward. That all three authors are from British institutions is not surprising, given the eminence of England in this field. Why this should be so would make an interesting study, but it is not addressed herein. Witkowski reviews Harrison's intellectual career, stressing the interaction between problem and technique. The contributions on pattern formation (Wolpert) and regeneration (Wallace) are too short to do justice to their subjects. Wolpert gives an excellent summary of the turn-of-the-century work on gradients, but he stops short of discussing many of the conceptual advances made in his own laboratory. Wolpert's contributions are detailed in the last chapter by the philosopher N. W. Tennant, whose essay on reductionism, holism, and determinism is written in a well-organized, non-technical style, which can even be read by scientists for whom nothing is real unless an antibody can be made against it. Tennant also respects the heterogeneity of developing organisms so that he does not talk about gastrulae or pupae in abstract, Platonic terms. His choice of Wolpert's research programme to illustrate his points is very apt.

Both embryology and history are disciplines that try to explain the present by analysing the events of the past. This volume is an attempt by both historians and embryologists to pool their historical understandings of their discipline. It comes at a time when developmental biologists are returning (with new techniques) to problems investigated and then abandoned by earlier generations of embryologists and when historians of science are realizing the importance of embryology as an intellectual endeavour at the forefront of biology. It should be widely read by both groups. Unfortunately, its price may severely inhibit its distribution. My expectation is that this will be a heavily-photocopied volume.

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W. F. BYNUM and ROY PORTER (editors), *William Hunter and the eighteenth-century medical world*, Cambridge University Press, 1985, 8vo, pp. xi, 424, illus., £35.00.

In 1983, the Wellcome Institute for the History of Medicine organized an international symposium to mark the 200th anniversary of William Hunter's death. Fourteen papers delivered at that meeting have been collected in this volume. Written by a group of well-known scholars, they represent a most valuable addition to our knowledge of eighteenth-century European medicine. In historical consciousness, William Hunter has hitherto lived in the shadow of his brother John, and readers will certainly appreciate the information on one of Britain's most influential medical figures of an enlightened age.

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The book is topically arranged into four parts. The first two articles in a biographical section were written by Roy Porter and Helen Brock and specifically deal with William Hunter, a prominent member of the new breed of healers called the men-midwives. Three further essays, by Ludmilla Jordanova on his obstetrical atlas, Adrian Wilson on man-midwifery, and Edward Shorter on the management of normal deliveries, specifically deal with Hunter's obstetrical career. These are supplemented by an article on the biomedical theories of conception by Angus McLaren.

The largest section of the book is devoted to eighteenth-century medical education, a subject close to Hunter's heart and which occupied much of his time. Here we encounter papers on the role of apprenticeship (Joan Lane), the structure of London medical careers (William Bynum), hospital teaching in London (Toby Gelfand), Edinburgh medical and surgical instruction (Christopher Lawrence), medical education in Halle and Berlin (Johanna Geyer-Kordesch), and clinical training in hospitals (Othmar Keel). Finally, the book has a brief section with works by François Duchesneau on vitalistic physiology, including the ideas of John Hunter, and Ian Rolfe on William Hunter's natural history collections.

As with most products of symposia, this collection suffers from a certain lack of cohesion and uneven quality of the papers contained therein, despite gallant editorial efforts to arrange them under specific headings. Perhaps an enlarged introduction would have made the transitions more explicit for the reader. Porter's opening essay is among the best. It looks at William Hunter within the contemporary medical context of the marketplace, depicting his activities—especially his teaching business—as part of an entrepreneurship necessary for securing the patronage of the rich and powerful. As always, Porter writes with clarity and wit, ready to debunk the mythology created by the “Great Doctors” historiography with sound scholarly analyses of the social matrix in which events actually unfolded.

Given my own interests, I greatly enjoyed the articles on eighteenth-century medical education. Together they open up new and important areas for future scholarship, especially concerning the role of the hospital in the training of surgeons and physicians. Bynum's ongoing research on the careers of nearly 570 eighteenth-century London practitioners, and Keel's comparative assessment of European hospital organizations involved in “the rise of the clinic” promise further results. In turn, Gelfand's analysis of clinical instruction in London voluntary hospitals after 1750 helps to fill a widely perceived gap, while Geyer-Kordesch's focus on the University of Halle offers an equally first-rate account of the political and institutional factors involved in its rise during the tenure of Hoffmann and Stahl.

Cambridge University Press should be congratulated for daring to publish a multi-authored volume, now often *materia non grata* in academic publishing. Not only has the book a superb index, but all footnotes are arranged at the bottom of each page for easy reference. Finally, the editors deserve our gratitude for helping to revitalize our studies of a medical world so ably initiated decades ago by Lester King. Eighteenth-century medicine is not just a necessary, albeit cumbersome, way-station on the road to modernity. Instead, this age stands on its own as one of the most critical periods in the history of medicine, as institutions and practitioners became enmeshed in new programmes and objectives closely linked to the Enlightenment.

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HELEN R. WOOLCOCK, *Rights of passage. Emigration to Australia in the nineteenth century*, London and New York, Tavistock Publications, 1986, 8vo, pp. xvii, 377, illus., £25.00.

When Queensland separated from New South Wales in 1859, there was 7½d. in the treasury and 25,000 settlers in an area seven times the size of Great Britain. *Rights of passage* describes how emigration schemes increased that population tenfold by the end of the century, recruiting mainly from Britain but also from Germany, Scandinavia, Switzerland, and Italy. They did not seek any old “refuse”—the earlier convict settlement at Moreton Bay had been full of that. What Queensland wanted were hardy young pioneers.

It was a good time to travel—the Passenger's Act of 1855 gave emigrant protection a strong legislative foundation, and the second half of the nineteenth century saw Britain's Public Health