

## Book Reviews

sample's careers, particularly in her discussion of specialization. Finally, she might have benefited from more time to reflect on the challenge her own evidence poses to the over-simple model of unified male opposition to women in medicine, a model that she draws upon in her first chapter. I very much hope that she has an opportunity to do so in the future.

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L. J. RATHER, PATRICIA RATHER and JOHN B. FRERICHS, *Johannes Müller and the nineteenth-century origins of tumour cell theory*, Canton MA, Science History Publications, 1986, 8vo, pp. ix, 193, illus., \$15.00.

No single scholar has done more to make classic texts of German pathologists accessible to an English-language readership than L. J. Rather. Following the substantial volumes of Rudolf Virchow's *Collected essays on public health and epidemiology* (1985), he has compiled an excellent edition of papers relating to Johannes Müller's contribution to the origins of tumour cell theory. An extended essay on the parts taken by Müller, Schwann, Schleiden and Henle in elucidating the nature of plant and animal cells is followed by a translation of Müller's seminal paper 'On the Finer Structure and the Forms of Morbid Tumours'. Particularly welcome is the republication of Schwann's three preliminary papers on cell theory in which he developed the theory that plant and animal cells show a unity of structure. While such a rarity would have merited parallel German and English texts (as with the Loeb classical editions), one must congratulate the translators for their accurate and readable rendering of the text. While no attempt is made to assess contemporary responses to these publications (abstracts of foreign papers in British medical publications also provide an excellent way to verify terminology), these two papers elucidate a central and neglected problem in the history of cell biology by specifying the exact nature of the contributions by Müller and such other leading researchers as Purkinje to the origins of cell theory.

Given that Schleiden, Schwann, Henle and Virchow were all Müller's students, it is necessary to reconstruct the fruitful exchange of ideas among this brilliant group of budding biologists. Rather points out that Müller's interest in tumours led to recognition of cartilage corpuscles, which corresponded to Schwannian cells. Müller appreciated the analogy between plant and animal cells, which Schleiden's essay developed. What Müller referred to as 'cells' were empty containers. Despite further refinements, Schwann retained the view of the cell as a membrane containing a structureless ground substance.

Rather is sensitive to nuances of terminology and to the prevailing cultural and medical contexts. It is important to recognize how such basic biological concepts as "the cell" arose from pathological investigations. Despite his excellent knowledge of primary sources, Rather cites neither general studies of the history of cell theory, nor some very relevant secondary literature. This would include Kisch's classic study of Remak (an important corrective to an over-emphasis of Virchow's role), and the general accounts of cell theory by Baker and Hughes. If he had done so, the originality of Rather's contributions to the history of cell theory would have become clearer. The judicious selection of the important texts by Müller and Schwann will ensure that this volume is of lasting value.

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MARY A. B. BRAZIER, *A history of neurophysiology in the 19th century*, New York, Raven Press, 1987, 4to, pp. xiv, 265, illus., \$83.00.

Studies of nineteenth-century neurosciences have recently received two fillips. The first of these was the publication late last year of Clarke and Jacyna's *Nineteenth-century origins of neuroscientific concepts*; the second is the arrival of Brazier's next volume of the history of neurophysiology, following her much acclaimed study of seventeenth- and eighteenth-century neurophysiology (*Med. Hist.* 1985, 29, 225–26).