

Book Reviews

cross-reference between papers. Worse, editorial indulgence has left several of them substantially overlapping in scope, if not mutually contradictory—so that Nutton does much of the job of three other contributors rather more cogently than they can themselves. The weakness of these three emphasizes a more general failure to match painstaking scholarship with thoughtful interpretation. Contented reference to “tradition and empiricism” is not enough: by now we ought to be questioning the sensitivity of that formulation, not merely endorsing it.

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POUL ASTRUP and JOHN W. SEVERINGHAUS, *The history of blood gases, acids and bases*, Copenhagen, Munksgaard, 1986, 4to, pp. x, 332, illus., £23.25.

Danish chemists and physiologists have made many significant contributions to the development of blood gas analysis, which plays such an important role in clinical chemistry. The senior author, Poul Astrup, who writes its history up to 1950, himself developed a delicate electrometric method of determining $p\text{CO}_2$ as a result of seeing patients die of respiratory paralysis from CO_2 retention during the Copenhagen polio epidemic of 1952–3. Astrup's account, which he describes as “novelistic”, moves from a fairly popular description of the history of respiration and pneumatic chemistry from ancient times to Lavoisier, through the development of vacuum pump techniques by Bunsen, Magnus, Meyer, Ludwig, Pflüger, and others, to an excellent technical review of the nineteenth- and early twentieth-century literature on the oxygen and carbon dioxide dissociation curves. He completes his story by tracing the complicated development of the concept of acidosis. Throughout, there is a welcome emphasis upon the relationship between instrumentation and scientific and clinical advances. Finally, in a rather self-indulgent chapter, his American anaesthetist friend, John Severinghaus, reviews major methodological and instrumental developments in the field (including Astrup's) since 1950.

The book, which is translated from the Danish version of 1985, is admirably illustrated and contains an abundance of biographical and anecdotal material for enlivening lectures on physiology or biochemistry or their respective histories. Historians of medicine will find the book superficial, but nevertheless a useful source of biographical information on obscurer European physiological chemists. The reviewer agrees with the *Danish Medical Journal* that it would “be a dream of a gift for a medical student”.

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