Prof. Whitehead argues that science cannot and need not give up the fundamental character of simultaneity. He regards the paradox as belonging to the realm of curious tricks of personal psychology, and protests against the "bifurcation of Nature."

Another symposium of scientific interest is that on "The Relations between Biology and Psychology." Dr. Haldane maintains that the perceived world is a psychological world and therefore a world of personality, but that it is not a world of individual personality. The physical world is an abstraction from the personal world. To argue that a man's personality depends on his body amounts to maintaining that he depends on an abstraction from himself. Dr. E. S. Russell contends that once we drop the materialistic conception we must swing over into the monadistic theory, and this is ultimately based on the immediate experience of ourselves as psychical individuals. Sir Leslie Mackenzie maintains that personality is just as much an abstraction as mechanism. He also challenges the validity of the expression "organism as a whole." The remaining articles are on logical and metaphysical problems.

Gas Manufacture. By Dr. W. B. Davidson. Pp. viii+464. (London: Longmans, Green and Co., 1923.) 21*s.* net.

THIS volume attempts a presentation of very much more than its title would lead one to infer; it sprawls over the manufacturing, distributive, and legislative aspects of towns' gas. Contrary to the author's expressed intention, the mechanical and not the chemical aspect of gas manufacture receives the greater prominence in the work. Thus, whilst eighteen pages are devoted to the chemistry of high and low temperature carbonisation, and eight to the chemistry of water-gas production, we find one hundred pages devoted to the description of carbonising plant, *et hoc genus omne*. Other chemical subjects discussed in the work include the gas laws, the constituents of coal gas, the materials of coal gas manufacture, residuals and analytical methods, whilst sections predominantly mechanical are devoted to condensation, gas purification, washing and storage, labour-saving appliances. Pyrometry and refractories are treated in a very inadequate five pages.

Special contributors are responsible for the sections on gas distribution, gasholders, retorts and retort settings. That on gas distribution proceeds along hackneyed lines, and does scant justice to the scientific principles involved. A certain amount of overlapping in the separate contributions is evident, *e.g.* pp. 17, 286; and pp. 43, 331. Occasionally there is an apparent absence of agreement in duplicated statements made by the same contributor, *e.g.* pp. 80 and 82. Truly has it been said "paper is very patient."

We regret the low esteem in which the author apparently holds the university-trained gas chemist and the "ordinary" teacher (p. 19), and wonder what the author himself does in that galley. We confess ourselves disappointed with the contribution made by so eminent a member of the profession to the literature of gas technology. A later edition will doubtless see considerable improvement in the work. In the meantime we commend the scattered references to calorimetric matters contained in the volume. J. S. G. T.

The Chemical Elements. By F. H. Loring. Pp. ix+171. (London: Methuen and Co., Ltd., 1923.) 8*s.* 6*d.* net.

MR. LORING'S work on the chemical elements is, like its predecessor "Atomic Theories," a distinguished piece of amateur work, and will be of interest to research-workers in these subjects, although its shortness, disjointedness, and, at times, lack of sound judgment, unfit it for unqualified use by students. "Amateur" is used advisedly and without offence, because it is plain that the author has not always thought out matters for himself; he does not write like one inside the subject. This is shown by his uncritical respect for authority and by his putting forward new and good ideas at the same time that he is expatiating upon the dullest of commonplaces. He does not always get behind his numerical relationships in the Periodic Classification to see how important or how trivial are their consequences.

The book is neither a text-book nor a monograph, but essentially an original contribution to the subject. It includes chapters on the quantum theory, on the theories of Bohr, of Langmuir, and of Kossel, and accurate summaries of the facts of such subjects as the isotopes of inactive elements, and of radioactivity; but the author's point of view and his ideas are kept before the reader throughout. In a more original chapter the author describes his "wedge" periodic table of the elements; in another he points out the significance of the rarity of the element scandium, and in a third, but without working out its consequences, he puts forward the good idea that the α-particle in radioactive change may result from its formation from hydrogen nuclei.

A number of appendices form one quarter of the book, and these deal with such subjects as the synthetic production of elements, the recent work of Dr. Aston, and a possible element of atomic number zero.

(1) *The Determination of Hydrogen Ions: an Elementary Treatise on the Hydrogen Electrode, Indicator and Supplementary Methods, with an Indexed Bibliography on Applications.* By Prof. W. Mansfield Clark. Second edition. Pp. 480. (Baltimore, Md.: Williams and Wilkins Co., 1923.) 5 dollars.

(2) *Der Gebrauch von Farbenindicatoren: ihre Anwendung in der Neutralisation-analyse und bei der colorimetrischen Bestimmung der Wasserstoffionenkonzentration.* Von Dr. I. M. Kolthoff. Zweite, verbesserte Auflage. Pp. ix+220. (Berlin: Julius Springer, 1923.) 10*s.* 7*d.*

(1) THE second edition of Clark's book on "The Determination of Hydrogen Ions" shows the results of a further exploration of the very wide field over which work on this subject is scattered, since in addition to making important changes in the text, the author has increased the number of references from 1100 to 2000. In the preface he makes the interesting suggestion that instead of writing the awkward symbol pH, where the H is really a capital subscript to a small p, the alkalinity of a solution should be expressed by the same numbers but under the designation of °S (degrees Sørensen).

(2) With this may also be noticed the second edition of a work in German by a Dutch author dealing with the colorimetric method of determining hydrogen ions. This is a small book, in seven chapters, which can easily