

BOOK REVIEWS

INSTRUMENTAL ANALYSIS, by PAUL DELAHAY, xi and 384 pages, The Macmillan Company, 61 Fifth Ave., New York 11, New York, 1957, \$7.90.

The volume covers Electrode Potentials, Potentiometry, Voltammetry, Voltammetric Titrations, Electrogravimetry, Coulometry, Conductometry and High-Frequency methods, Emission Spectroscopy, Absorption Spectrometry, Fluorometry, Raman Spectroscopy, X-ray Spectroscopy including absorption, diffraction, and fluorescence methods, Mass Spectrometry, and Nuclear Radiation methods such as tracer methods and activation analysis.

The author attempts neither to discuss instrumentation from the design standpoint nor to give details of commercially available instruments; nor is his aim to present the application of instrumental techniques to specific analytical problems. Emphasis is placed on fundamental theory. The author makes good use of schematic electrical and optical diagrams. His discussions of the limitations and applications of the various methods are excellent.

About fifty experiments are presented as laboratory exercises and many problems are provided for study purposes. Here again the experiments and problems are designed to illustrate points of theory.

The book is intended for both undergraduate and graduate students. However, students without some background in physical chemistry may find the presentation of electrochemical theory too concise and a little heavy. The extensive references to original literature and the comprehensive up-to-date bibliographies which include key research papers, review articles, reference books, and monographs are extremely valuable to the research chemist.

ERRATA AND POINTS THAT CAN BE CLARIFIED

p. 23. Table IV, last column. Heading should be: E^0 for $M^{+n} + ne = M$.

p. 44. $\frac{AB}{A'B'} \frac{BC}{B'C'}$ should be $\frac{AB}{A'B'} = \frac{BC}{B'C'}$

p. 44. $B'C' = q - v$ should be $B'C = q - v$.

p. 47. 2nd paragraph; C_H^+ should be C_{OH}^-

p. 76. Fig. 30: Ordinate i/i_d difficult to read because of small size of print.

p. 82. 3rd paragraph, last sentence: *if* should be *is*.

p. 87. 4th line from bottom; Fig. 33 should be Fig. 34.

p. 96. Paragraph 4 can be misinterpreted. Author should specify that E_1 should be less than the decomposition potential and that E_2 should be a potential where the diffusion current is observed.

p. 131. Line 23: *iodine* should be *iodide*.

p. 164. Last paragraph can be clarified by indicating on Fig. 58 what the angle θ is.

p. 167. Line 11 from bottom: Instead of "the effect of birefringence thus cancels" it would perhaps be better to say: this compensates for any optical rotation produced in the initial passage.

p. 169. Paragraph 5: *Conversely* should be *Similarly*.

p. 174. 2nd paragraph: A diagram would help to clarify. 4th paragraph 3rd line: *Spark* Spectra are due to excited ions and not atoms.

p. 213. 2nd line: *fibers* should be *filters*.

p. 225. Discussion of Fig. 96 would be more understandable if author stated that no monochromator is used.

- p. 246. 3rd line from bottom: the statement "Some of these elements (boron, for instance) cannot be conveniently analyzed by filter photometry because of lack of a suitable reagent" is not true. There are several excellent reagents for boron, for example, 1,1 dianthrimide. Similarly for the other elements quoted.
- p. 265. 2nd paragraph: *without* should be *with*.
- p. 281. 1st paragraph: *electic* should be *electric*.
- p. 292. Footnote 41: *Burea* should be *Bureau*.
- p. 312. $\frac{1 - e^{-0.40 \times 1.5}}{0.40 \times 0.15}$ should be $\frac{1 - e^{-0.40 \times 1.5}}{0.40 \times 1.5}$
- p. 316. Line 22 and 25: (4-22) should be (14-22).
- p. 321. Line 17 and Table XXII: Radionuclides do not (usually) disintegrate with independent gamma ray emission. Gamma ray emission is usually an accompaniment of beta or alpha emission. This should be made clear for line 17 and footnote C Table XXII.
- Line 2 from bottom: *smaller* should be *larger*.
- p. 328. P and R in reference to Fig. 131 are not shown on Fig. 131.

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