

still await their final volume, which is to contain all of Cauchy's pamphlets and lithographs.

3) Page 988 contains some doubtful remarks concerning Dedekind and Peano. Dedekind's *Was sind und was sollen die Zahlen?* was only first-drafted during 1872–1878, and it attracted far more interest after its publication in 1887 than Kline allows. But, as opposed to the claim often made elsewhere and repeated here, it does not seem to have been used by Peano when writing his 1889 *Arithmetices Principia*, for in a later paper Peano said quite explicitly that his pamphlet had been prepared independently of Dedekind's.

4) Kline discusses at length Cantor's theory of real numbers (pp. 984–85), but he overlooks the difficulty in Cantor's theory of interpreting the equality of two numbers defined by different fundamental sequences. Later he misrepresents Cantor's second number class (p. 1001), giving it a last term. He also asserts that Klein "was by no means in sympathy" with Cantor's ideas (p. 1003), whereas Klein had Cantor's papers published in *Mathematische Annalen* after the opposition from Kronecker.

5) Kline's discussion of Russell's theory of types merges its "simple" and "ramified" parts (p. 1195) and so renders enigmatic the remarks on the axiom of reducibility. The discussion following of the construction of mathematics by logicist means omits mention of ordering and relation arithmetic, whose techniques are vital to such developments.

6) The discussion of measure and its applications (chapter 44) astonishingly ignores W. H. and G. C. Young, who did as much as anyone in this area.

One could continue in this vein; but nothing can, or should, dispel the fine impression that this book leaves. I am still amazed by the amount that Kline has achieved.

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Lore of an Element

Mercury. A History of Quicksilver. LEONARD J. GOLDWATER. York, Baltimore, 1972. xiv, 318 pp., illus. \$15.

Is this the first case history of a chemical element? Quite possibly. It sets a pattern worthy of emulation for each of the other elements. However, few elements have been of such fascination to man over so many centuries as has

mercury, liquid yet with the mysterious properties of metals. Chinese alchemists in the fourth century prescribed cinnabar, red mercuric sulfide, as the elixir for attainment of immortality. In later eras mercury in the ear was a method of murder—suggesting a possible cause of death of Hamlet's father. Mercury it seems even when swallowed in amazingly large quantities often passes through the system with little harm. Yet mercury breathed or mercury in the blood has awful consequences. Mercury was one of the three elements (the others being sulfur and salt) of which all substances were believed by Paracelsus and others to be constituted. It even had a planet named after it. It played a major role in the battle against syphilis and still there is disagreement whether treatment did more harm or good. All this and much more is contained in this book, including the questioning of one thing we did think we knew! Was Alice's Mad Hatter afflicted with the "hatter's shakes," the occupational disease of the felting industry, in which mercury compounds were used, or was "mad as a hatter" a corruption of "mad as an adder"?

Here is a work of broad-ranging scholarship delving into the earliest discovery and the uses of mercury in every corner of the globe. Part 1 deals with aspects of mercury other than its effects in man, tracing the history of its use in the occult arts, its extraction, its importance in trade and finance, and

knowledge and use of it through the ages, including its role in chemistry and its uses in scientific instruments. Part 2, the medical aspects, represents the author's special field, for he was studying the hat industry in 1936, was involved in World Health Organization studies of mercury, lead, and arsenic pollution in 1956 (ten years before the public alarm), and has been developing analytical procedures for large-scale human studies.

The book carries extensive lists of references, though unfortunately they are not always specific, occasionally omitting page numbers. One piece of mercury lore not found in the book would interest the author and maybe others. Spinach is reported to have been used by the early Chinese as an antidote against mercury poisoning no doubt produced by their attempts to become immortal (E. H. Shafer, *The Golden Peaches of Samarkand*, University of California Press, 1963, p. 147). Is the oxalate in spinach responsible for the removal of mercury?

This is an absorbing book of interest to a wide range of readers. Historians, teachers, ecologists, researchers dealing with mercury (and who doesn't?), doctors, dentists, and investigators of occupational diseases all will find material to ponder or to be amused by.

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Health Care and Social Policy

The Case for American Medicine. A Realistic Look at Our Health Care System. HARRY SCHWARTZ. McKay, New York, 1972. xiv, 240 pp. \$6.95.

The American Medical Machine. ABRAHAM RIBICOFF, with Paul Danaceau. Saturday Review Press, New York, 1972. vii, 212 pp. \$6.95.

Health Care: Can There Be Equity? The United States, Sweden, and England. ODIN W. ANDERSON. Wiley, New York, 1972. xxii, 274 pp., illus. \$11.95.

The movement toward an improved health care system in America proceeds haltingly but persistently. It is a centipedic movement and its forward pace is sometimes hampered by separate limbs reaching in different directions. Sometimes there seems to be no motion at all.

Impetus for the movement comes from many sources, some internal and others external to the system. Advances in biomedical science constantly challenge medical practitioners to alter treatment practices. A range of personal and professional reasons contribute to a discernible trend toward multi-specialty group practice and away from solo practice, and to a related if somewhat vaguer attention to preventive care. Demonstrated needs occasionally prompt new governmental policies aimed at eliminating severe medical hardships for special groups of citizens. High costs of medical care bring popular cries for controls, or at least for financial help. Politicians recognize the citizenry's continuing preoccupation with health, and are prop-