of the story of magnetism. These experiments include conventional magnetization and susceptibility measurements, neutron scattering, magnetic resonance, Mössbauer effect, specific heat, resistivity, and optical properties. Virtually all of the properties of matter reflect a transition to the magnetic state. I am not certain of the value of the 30 or so pages at the beginning of chapter 2 devoted to elementary quantum mechanics. I would guess that if one did not thoroughly understand the material in this section prior to reading the book, a great portion of the book would be incomprehensible. The treatment of a number of the topics considered emphasizes the physical aspects of the problem. In particular Martin's arguments for the quenching of the orbital momentum by the crystal field are extremely clear. Molecular-field models are used initially to characterize the various magnetic phases that occur in nature. It is good to see the inadequacies of the models illustrated by comparisons with particular magnetic systems. In the discussion of the exchange interaction between electrons there are several places where the simple but lengthy formal mathematics might have been streamlined. The last chapter of the book is devoted to describing the approximation techniques for obtaining the thermodynamic properties of localized magnetic systems in the low and high temperature regimes. The nature of the spin-wave spectrum for the various crystal structures and the high-temperature expansion technique are remarkably clearly presented.

Possibly the author has fallen short of his goal "to present a broad account of the subject which takes the discussion of major topics to the points of current investigation," but he does present us with an extremely readable introduction to the varied aspects of magnetism.

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A Man One Did Not Forget

The Difficult Art of Giving: The Epic of Alan Gregg. WILDER PENFIELD. Little Brown, Boston, 1967. 428 pp., illus. $7.95.

At rare intervals a combination of inheritable and environmental elements, generously mediated by chance, permits the emergence of a "man for all seasons." Such a man was Alan Gregg. Fine of physique, charming in manner, endowed with intelligence and wit, he was a man one did not forget. Although never a teacher in the ordinary sense, never a practicing physician, rarely a direct contributor to scientific knowledge, he yet influenced countless teachers, physicians, and scientists. Moreover, he fashioned the giving of money into an art and endowed it with luster beyond the gold involved.

Even so, few lives deserve the epic characterization; yet Alan Gregg's probably does. But why? It is not easy to say, and herein lies the fascination of Wilder Penfield's perceptive biography. The answer is almost here, but not quite. The final essence to be distilled from the variegated public and private life of Alan Gregg still eludes us.

The son of a Colorado minister from New England, Gregg attended Harvard College, where he served on the *Lampoon* with such future savants as Walter Lippman, Gluyas Williams, Robert Benchley, and T. S. Eliot. Small wonder that he carried the marks of this association, and the bent they suggest, on to medical school and into his career. Following medicine at Harvard and a medical residency in the Massachusetts General Hospital, he declined a flattering offer to enter private practice, turning his face instead toward public health. A remark by an associate at the end of a busy day in the outpatient clinic seemed crucial in this decision. "I imagine a long line of people waiting to see me," said the young physician, "most with a sprained ankle because there is a hole in the sidewalk just down the street. I am so busy with patients who are in pain, however, that I never have a chance to get a shovel and fill up the hole."

But World War I intervened, and Gregg soon was in France with the British. His letters and diaries of the period are interesting in themselves, a worm's-eye view by one who could see the odd and the ridiculous and who could write. It was at this time that he began what Wilder Penfield terms a commonplace book, though Alan never named it. He kept it up throughout his life. Here were entered thoughts, often fragmentary, frequently enigmatic, and, though their author dated them, with no obvious relevance to the events of the day. Yet Gregg was too sensitive to the life about him for these to have been wholly irrelevant; rather, the input of events probably flowed through this complex being to emerge in often poetic notations.

At war's end, he was off to Brazil as a field-staff member of the Rockefeller Foundation's International Health Board. Long weeks were spent in the bush, fighting malaria and the anophiline mosquito by day, writing to Eleanor Barrows by night. The latter battle he won, and soon after the foundation called him back to New York they were married. Mrs. Gregg wrote long afterward, "We went to Carmel (California) because it was the most beautiful place we both knew—Alan found a minister whose name I do not know—. My mother, my nephew, my sister, my niece and my dog were present at the 'ceremony'—after which we bought a few groceries and drove down the coast to camp under the stars on the ocean's edge—. Proposal, engagement, announcement, wedding reception, wedding ring, etc. simply did not enter into the picture—and if *that's* not *Romance*—then I don't know what *is*. Our relationship lends itself more to poetry than to prose—. So it began and so it ended." Throughout their life together, the Greggs were content to shut their private lives away from the world; they entertained rarely, and she took little part in his professional activities.

But to move from the subtitle to the title of Wilder Penfield's book: Alan Gregg flourished in a time when $10 million was a lot of money; the Rockefellers and their most intimate advisers were frugal men, and so was he. They, and he, had the same high sense of responsibility, of which an essential offshoot is the necessity for hard work. This expressed itself in the industrious acquisition of facts, which, leavened with imagination, served as a basis for choosing the foundation's beneficiaries. Alan Gregg worked hard at the job of giving money for the improvement of medical education. First in Europe, where for seven years he headed the Paris office of the Rockefeller Foundation, and then during 22 years as director of the medical division in its New York headquarters, he assembled countless facts about medical schools and what they were doing that made him perhaps the best-in-

formed man of his time on the subject.

Never forgetting that men—scholarly, inquisitive, competently educated—are the prime ingredient in medical education, he soon came to know virtually every able and promising medical scientist in Europe and later in the Americas, with the aid of his card index spotting the leaders of the next generation, offering them fellowships, encouraging their development. As Gregg's philosophy of giving developed, it became evident that he and Simon Flexner, in a sense his predecessor in the Rockefeller Foundation, had fundamentally different approaches to the problem; Flexner favored the concept that support of centers of excellence would result in upgrading all institutions, Gregg that the brightest men wherever found should be the medium through which the foundation would work. The story of the years of giving is well told by Penfield and deserves thoughtful reading by anyone who is on either the giving or the receiving end of philanthropy.

It is difficult to assess the impact of Gregg and the Rockefeller Foundation on medical education in Europe and America, but it was probably great. There is no doubt that Gregg became a seer in his own time, being consulted by persons from all over the world. In May 1953, he turned westward to retirement at Big Sur, leaving the foundation with the timeless quip, "Nothing succeeds like a successor."

Out of his great attachment to Alan Gregg and his intimate knowledge of scientific medicine, Wilder Penfield has drawn a compelling picture of an unusual man. The picture, however accurate, has unresolved paradoxes—a widely ranging warmth of spirit coupled with a need for *Binnenleben*, life within oneself, the loneliness of the poet. As seems proper, Penfield has elected to give us only those thoughts from the commonplace book that he believed Alan would now willingly share. Perhaps in some distant day those that are at present secret may yet reveal the essence of Alan Gregg.

Included in an appendix are the aphorisms of Alan Gregg, selections from his writings, and a list of his numerous publications. There is an index.

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Factors in Effectiveness

Institution and Outcome. A Comparative Study of Psychiatric Hospitals. LEONARD P. ULLMANN. Pergamon, New York, 1967. 213 pp., illus. $7.50.

A recent summary of the health of the United States population notes that "by far the largest number of patient-days in hospitals results from mental illness." As a public health problem, and a more broadly social problem, mental illness is of such great magnitude that it requires no emphasis. Hence any contribution to the more effective functioning of psychiatric hospitals promises large social dividends; in addition, a heightened understanding of how these institutions operate promises to further our knowledge of human organization in general, whether it be hospital, university, or factory.

In the present volume Ullmann makes such a contribution. His achievement is impressive on at least two counts: he offers a closely reasoned and elegantly executed investigation of how a group of 30 hospitals performs the essential task of returning hospitalized individuals to the community; and he supplies a historical and social-psychological analysis of mental hospital organization within which his specific research findings take on full human meaning.

The measures of the effectiveness of hospitals in reaching the goal of getting patients back to the community were, first, the percentage of individuals who attained early release (defined as being discharged within 274 days after admission and remaining in the community for at least 90 consecutive days) and, second, the percentage of individuals with long hospitalization (two or more years). It should be noted that these were all Veterans Administration hospitals, a fact that made it possible to obtain useful standard records and maximum comparability; at the same time, this restricted the patient population to males and may also have imposed certain organizational idiosyncrasies that limit the generalizability of findings.

Ullmann began with the hypotheses that *small size* and *increased staffing* would be associated with effective hospital performance. His hypotheses were confirmed, although the detailed analyses make it plain that the relationships are complex. For instance, small hospital size is more closely associated with early release as a measure of effectiveness, and increased staffing appears more intimately related to a lower percentage of patients with long hospitalization. The author goes on to show that small size is already accepted as desirable, but that the uses of increases in both funds and staff need to be specified; more money and more people will not influence discharge rates unless the money is put in the right places and the people are the right people. Still more fundamentally, psychiatric institutions will not change for the better unless the assumptions on which they run are changed. In the Veterans Administration, for instance, the very basis of financial support is tied to an antitherapeutic premise: the more patients occupying beds, the more nearly the hospital is fulfilling its mission. In reality, of course, such a funding procedure encourages the very kind of custodial long-term care that modern social psychiatry is at pains to combat. The hospital, the author asserts, must shift from the conventional bureaucratic mode of organization, with its emphasis on hierarchical control, toward a more flexible, decentralized mode that brings staff and patients closer together; essentially, he argues for what some have called "collegial bureaucracy" and others term a "neoteric" model of organization.

This is an extremely valuable book. It adds to our knowledge of organizational functioning. If the author's modestly phrased but trenchant suggestions for improvement of psychiatric hospitals were acted upon, hospital personnel, patients, and society at large might profit immensely.

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Scattering

Scattering Theory of Waves and Particles. ROGER G. NEWTON. McGraw-Hill, New York, 1966. 699 pp., illus. $19.50.

This book is a large treatise on all possible applications of the Schroedinger equation and related wave equations, including those for electromagnetic waves. It contains a detailed description of new and old techniques so far discovered in this field, and many exercises as well. The author has produced a very complete and homogeneous book written in a clear and orderly fashion. His mastery of the