as experiencing a "growing freedom from submissiveness to others and a consequent involvement in the fulfillment of [their] own capabilities." They became more democratic in social attitudes and more concerned with national and international matters. Stein speculates on the Peace Corps experience as a "psychological moratorium" (a concept from E. H. Erikson) in which the volunteers could explore a variety of new roles before settling into adult commitments.

The author is hopeful for the Peace Corps and convinced of its value, yet he disciplines his optimism within the context of objective data. The presentation carries the reader's interest forward. The style is straightforward and free of jargon. The statistical tables are unobtrusive (although the material on time trends might better have been plotted as graphs). Stein shows how the tools of psychological assessment can clarify the task of people-to-people assistance, and at the same time he advances the development of the assessment process itself.

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Aeronautical Breakthroughs

Aviation: The Creative Ideas. OLIVER STEWART. Praeger, New York, 1966. 244 pp., illus. $7.50.

Oliver Stewart argues that of the small creative band who have provided the basic aeronautical ideas, a large percentage have been British. Long the editor of *Aeronautics* (London) and a perennial commentator at the annual Society of British Aircraft (now Aerospace) Constructors show at Farnborough, he writes with familiarity of Sir Alliott Verdon Roe (A. V. Roe), the Short brothers, the Hill brothers, Cierva, Handley Page and Lachmann, A. A. Griffith, and Barnes Wallis. In general the approach is topical, with the development of each aeronautical breakthrough associated with one or more men who worked in Britain. The major exception is the long first chapter on Clement Ader, for whom Stewart claims the laurels for the first powered flight. A very loose chronology is employed which can lead many readers astray and give the impression that events which were a decade apart followed each other in short succession. But the major problem with this useful and provocative work is that it is inaccurate. Its faults stem from journalistic familiarity. There is too great a reliance on memory and upon conversations many years after the vital event. My own acquaintance with the work of Barnes Wallis makes me have considerable doubts about the accuracy of much of the book. Stewart is apparently unaware of Wallis' background. The airship *R 100* was not the first but the last of these machines which Wallis designed and built. He joined Vickers in 1913 and was trained by H. B. Pratt. By 1916 Wallis had become the chief airship designer and had produced the plans for *R 80*, a fully streamlined ship equal to the Zeppelins in conception. When airship work was stopped at the end of the war, he took a doctorate. Sir Dennistoun Burney coöpted him to design *R 100*, on which Nevil Shute (N. S. Norway) also worked. This fully streamlined ship was the forebear of the geodetic system and a major contribution to the whole field of structural engineering. Wallis then carried this work on through the Wellington-Warwick series of twin-engined bombers to the four-engined Windsor, which Stewart does not even mention, though it had several interesting features, including remote-controlled 20-millimeter cannon mounted in the rear of the engine nacelles. Moreover, except for the dam-busting bombs, Wallis' superbombs were developed from the streamlined *R 100*, as comparative photographs of the bombs and the airship clearly show. Whereas in the airship the fins were designed to maintain stability in level flight, in the bombs they were offset in order to provide stability through spinning. In the case of Oswald Short the interest in all-metal stressed-skin construction was a natural development from Short Bros.' work with seaplanes and flying-boats. The Shrimp seaplane of November 1919 was built with steel wing spars and the all-metal Silver Streak followed in July 1920. In an album of photographs which Oswald Short gave me several years ago he made no such claims as Stewart does for him in chapter 3 that the machine was a breakthrough in streamlining. Regretfully it must be concluded that this would have been a much better book if the author had checked his memory against the facts.

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Nitrogen Compounds

Developments in Inorganic Nitrogen Chemistry. Vol. 1. CHARLES B. COBURN, Ed. Elsevier, New York, 1966. 591 pp., illus. $32.50.

"Much of the interest in the resurgence of inorganic chemistry during the past twenty-five years has been directed towards the novel and unusual. . . . However, during this same period the chemistry of even the best known of the elements has undergone tremendous development and change even though it was scarcely noted," Charles B. Colburn writes in his preface to this projected two-volume work, which is intended to "review in considerable detail the chemical status of one of those relatively neglected elements—nitrogen" and "to bring the inorganic chemistry of nitrogen up to date to the mid 60's."

The present volume attains this objective very well. It is not a book to be read to gain a general impression of the field as a whole. Rather, it is a book to be consulted to learn the state of development of particular aspects. The chapters are written by acknowledged authorities on their subjects: "Bonding in nitrogen compounds," by M. Green [these include diatomic species (NH, NH^+, N_2^+, CN, NO, and NO^-), polyatomic species (triatomic molecules, radicals, and ions; HNCO; CH_3N_2; and so on) the N-Si bond; oxides; and cyclic compounds]; "The inorganic azides," by A. D. Yoffe; "Compounds containing the sulfur-nitrogen bond," by M. Becke-Goehring and E. Fluck; "Nitrogen ligands," by W. P. Griffith; "Phosphorus-nitrogen compounds," by M. L. Nielsen; "Nitrogen compounds of boron, aluminum, gallium, indium, and thallium," by J. K. Ruff; and "Inorganic reactions in liquid ammonia," by G. W. A. Froles.

The professional associations of the authors reflect the international character of modern chemical investigation. Each of the chapters represents a major effort at compilation and is sufficiently complete to have justified a small book in itself. The authors are to be congratulated on the thoroughness with which they have accomplished their assigned tasks. The book will prove very useful to those working on inorganic nitrogen compounds and to others who require ready access to information about them. Full use is made of figures and tables in presenting the abundance of data.

Any book compiled in sections by