geology of North America. The emphasis is on the development of the structure of the outer shell of North America, rather than on its stratigraphy, its paleontology, or the origin of its land forms.

The book deals, in the main, with southern Canada and the United States (exclusive of Alaska), because that portion of North America is geologically best known. Moreover, regions that are thought to illustrate principles of continental evolution or stages in that evolution have been selected. The author, therefore, warns the reader that he is likely to discover that some favorite area of his is not discussed.

The book comprises nine chapters. Each chapter closes with a short list of references, mainly of the more recent literature. These lists are not exhaustive but "represent reading in which the author himself found pleasure, instruction, or stimulus."

The idea that the North American continent has undergone a steady evolution dates back to James D. Dana. "The scheme of progress even to minor details dates from the beginning. . . . Tracing out the development of the American continent from these Archean beginnings, is one of the main purposes of geological history." In short, Dana's hypothesis was that the continents, beginning from old nuclei, grew by successive additions, on their borders, of folded geosynclinal belts more and more recent in age. This idea is still widely held. King's view, which is similar, is given briefly in chapter 1 (pages 7–8); it is that the continental plate was built outward from a nucleus over the original underlying layers of basic rock ("sima"). However, the idea of an evolutionary growth of North America is not developed *in extenso* or presented in chronologic sequence.

In contrast, Kuenen in 1950 bluntly stated that the widely held idea on continental growth "does not meet the facts." The folding of a geosynclinal tract, according to Kuenen, instead of enlarging a continent, actually thickens and narrows a belt that already belongs to the continent. Such opposing hypotheses manifestly require further examination.

In a remarkably frank statement in the preface of the book King declares that the work is not "a textbook in the usual sense. . . . It is avowedly 'slanted' in directions of his [King's] current thinking, and contains willful prejudices and outrageous hypotheses, some of which may not stand the test of time. These prejudices and hypotheses would certainly corrupt the tender minds of undergraduate students and uninitiated laymen as no textbook should do." To ameliorate this harsh judgment, which implies a complete negation of the scientific method, it is but fair to point out that *outrageous hypotheses* is used in the William Morris Davis sense of meaning hypotheses that were considered completely unreasonable but eventually became orthodox doctrine [*Science* **63**, 463 (1926)].

In conclusion, geologists will find this volume, within the limitations indicated, to be a remarkably interesting and valuable synthesis of the regional geology of North America.

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The House of Intellect. Jacques Barzun. Harper, New York, 1959. viii + 276 pp. $5.

It is fashionable to feel uneasy about education and to have a sense of disquiet about the status of educators, scholars, and intellectuals. College presidents are coming out of their mendicant stoop and looking their constituency in the eye. Scientists speak up, are heard, and get money. *The House of Intellect*, by Jacques Barzun, is good medicine for the uneasy minds and for the self-confident ones.

His "Intellectual"—aggressively capitalized—is not simply the educator or the scholar. He is broadly defined through comparison with the artist and the scientist. More specifically he is the critical, discriminating, and clarifying mind, not imprisoned within a narrow speciality but with access to the broad fields of human knowledge. For different reasons the artist, the scientist, and the professional specialist are enemies of, or obstacles to, "the Intellect." The artist is the enemy of the Intellect because of such things as art's revulsion from words, from coherence, and from a normal and clear portrayal of the real world. Thus, art provides imprecision in language and distortion in thought and lets good taste and discrimination founder in inconsistent, arbitrary, and eccentric forms of expression. Science is the enemy of the Intellect because it has broken up the unity of knowledge and has favored a high-walled disciplinary separateness. Finally, the pervasive American spirit of philanthropy—which is the parent of mass education, of the right of equal entry for other forms of knowledge into education—is the enemy of the Intellect because it corrupts judgment, makes it difficult to insist on quality and success as established by rigorous standards of measurement.

Each reader will find his own favorite chapters in this aggressively written book. Two chapters, "Education without instruction" and "Instruction without authority," are required reading for all who seek some of the explanations of why American education may be failing to meet the challenge by which it is faced. The underpayment of the teacher and the underemployment of the pupil are only the first of these.

Each reader will also find cause for irritation and disagreement. Barzun is clearly unfair to the scientist in failing to recognize that some of the characteristics of new scientific fields, especially the submicroscopic ones in biology and physics, do not lend themselves to easy communication. In these, essential understanding is available only to small, specially trained corps of experts. Sometimes Barzun descends from helpful criticism to mere faculty-club chitchat without seeming to notice the difference. There are statements on the letting of scientific research contracts that are simply not true.

This is a book of nuggets; the reader must do a lot of his own panning to get them out, but it is worth while.

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Progress in Biophysics and Biophysical Chemistry. vol. 8. J. A. V. Butler and B. Katz, Eds. Pergamon, New York, 1957. viii + 409 pp. Illus. $17.50.

Volume 8 in this series will be as useful as the previous volumes to specialists and advanced research workers in physiology. One must agree with the editors of this informative collection that here is something for all tastes. Among the best chapters are one by R. H. Smith on the biosynthesis of connective tissue components, which emphasizes the important role of ascorbic acid in the formation of collagen, and one by F. O. Schmitt and N. Geschwind on axon surfaces and the problem of neuronal junctions. Likewise, I. C. Whitfield has contributed a superb summary of the physiology of hearing. But other sections do not meet the same standard of organization.

It is, of course, understandable that