of data pertaining to all phases of chemical biology.

The clinician will find in Professor Wells's book not only much that is very instructive, but also, if he be so minded, much that will stimulate him along lines of individual investigation. The chapters devoted to the diseases of metabolism, such as diabetes, while less exhaustive than they might be, are excellent in the compact, condensed style in which they are written. Preceding the study of each disease is given a short description of the chemistry of related normal metabolic changes and the various pertinent theories of importance. It is a question whether future editions of Professor Wells's book might not be improved if more space should be devoted to such diseases as gout than they receive in this edition. While it is true that there are exhaustive works on such subjects, Minkowski's, for example, they are not much read by practising physicians nor by students, perhaps because they are too full of details, while a book like Professor Wells's is almost sure to be in large demand.

One is often led to wish that the author were less reticent in stating his own ideas relative to many questions. The writer of a book like this steps out of proximity to any one problem and, by virtue of his apartness, he is apt to have a correct perspective of the results of its investigation and of the relations that such results bear to each other and related data. From such a vantage point, the criticisms of a man who has himself been a laboratory worker are valuable to student and investigator alike. As Professor Wells says, what the investigator in scientific fields most requires is effective guidance, and ready access, to original publications. The excellent bibliography in the book under discussion affords that.

When one considers the extent of the field that must be covered by a book dealing with chemical pathology, it is surprising to note the large amount of matter that Professor Wells has compressed into a relatively small volume. It is our opinion that the demand for Professor Wells's book will be a cumulative one and that his successful authorship will induce him to include, in future editions, discussions of various additional pathological matters of importance that could not be encompassed in the original volume.

Nellis B. Foster

Columbia University,
November 18, 1907

Physiography. By Rollin D. Salisbury. American Science Series—Advanced Course. New York, Henry Holt and Company. 1907. Pp. 770, plates, figures, maps.

Object.—As Professor Salisbury states in the preface of his "Physiography," the book is intended for students of early college or normal school grade who have received elementary instruction in the subject, but who do not expect to pursue the study further. There are a number of text-books on this subject which have been published from time to time within recent years but none of them has been devoted especially to this class of students. Professor Salisbury's book, therefore, meets a real want and the character of its compilation, based as it is, on many years of experience in teaching, gives the book a completeness far beyond any other physiography published up to this time.

Plan.—The book is a companion volume to "Geologic Processes" which appeared in 1905, and much the same plan of treatment is adopted in both. In the "processes" the emphasis is thrown on the discussion of the agencies which have brought about changes in the earth's crust. In the "Physiography" topographic forms are brought into greater relative importance and less discussion given to the processes which have produced them. Part I. is devoted to the Lithosphere, part II. to the Earth Relations, part III. to the Atmosphere, part IV. to the Oceans. Each one of these major divisions is subdivided into appropriate chapters.

Illustrations.—The "Physiography" is as fine an example of text-book making as has yet appeared on the subject, and it is difficult to see where it could be improved. The figures which are both halftones and line engravings, are well selected, numerous, and beautifully reproduced. The maps are in great measure

lithographs, in three colors, of typical localities within the United States. Such charts as are used to illustrate weather conditions are well selected. Nearly every phase of the subject has its appropriate figure or map to aid the student in gaining a correct idea of the matter in hand.

Exercises.—One of the most important features of the book is the portion devoted to original exercises at the end of each chapter. By the use of these exercises the student is induced to think for himself and apply what is discussed in the text. As far as is practicable the student is led up into the subject rather than led down out of it. Numerous well selected references are given. These serve a double purpose. Not only do they place the student in touch with more important publications bearing on the subject but they also furnish a list of books which might well be placed in every school library for the use of science teachers. It is a gratification to have such a text-book to work with and it will be appreciated by every teacher of physiography.

GEORGE BURBANK SHATTUCK

SOCIETIES AND ACADEMIES

THE NEW YORK ACADEMY OF SCIENCES—SECTION OF GEOLOGY AND MINERALOGY

AT the first regular meeting, October 7, 1907, the following papers were read:

On the Pebbles at Harwich (Cape Cod), Mass., and on Rude Arrow-heads found among them: DR. ALEXIS A. JULIEN.

Along the south shore of the apron-plain at Harwich the glacial deposits show abundant sections of layers of gravel, often coarse, and at one point huge angular boulders, up to eight feet in diameter, similar to those in the moraine along the north side of the cape. The pebbles consist almost altogether of crystalline rocks in considerable variety, in which, however, three types predominate. The principal one is a coarse binary granite, sometimes porphyroidal, passing by addition of hornblende into monzonite. Its sheared form seems to be represented by pebbles of granite-gneiss or aplite-schist, without mica, and very rarely of a fine biotite gneiss.

This rock appears to have been cut by intrusive dikes, both of an acid rock and of another of intermediate character, occurring in abundant pebbles. The one is a pinkish quartz-porphyry, a white felsite or finely striped rhyolite, whose sheared form appears to be a white phyllitic gneiss, with minute augen-structure. The other, a rather finely granular gabbro, made up of white feldspar and a greenish black hornblende-like mineral. This rock by shearing has passed into a hard greenstone, often decidedly schistose, and perhaps into a banded schist. Besides these three types, several varieties of fine crystalline schists, probably metamorphic; rarely small grains of serpentine; and occasional flakes of blue-black argillite. A marked feature in all these rocks is the almost entire absence of mica of any kind and that mineral does not occur even in the sands and clays, at least in scales visible to the naked eye.

By contrast, the characteristic rocks of the adjoining coast along the mainland of eastern New England have not been found, in spite of constant search, *e. g.*, the mica-gneisses and mica-pegmatites north of New Bedford, the granite of Quincy, Mass., the Dorchester conglomerate, the pyroxenic rocks and basic mica-diorites of Nahant, the porphyritic biotite granites of the Maine coast, etc. The conclusion is that the pebbles at Harwich have been transported from some other mica-less region.

Among the pebbles in ploughed fields many rude stone implements may be found, such as tomahawks, scrapers, lance-heads, and particularly arrowheads of the simplest form, probably left by Indians of the Massaquoit tribe, of whom several small kitchen-middens have been found in the neighborhood. These tools have been made from the local materials above described, chiefly from pebbles of the harder and finer schists, rhyolite, quartz-porphyry and often granite. Their dull edges and rounded points may imply that in many cases they have never been sharpened, but used for stunning birds and small animals. Many