definitely too luminous and not sufficiently dense to be considered true white dwarfs.[6]

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## SOUTHERNMOST GLACIATED PEAK IN THE UNITED STATES

SAN GORGONIO PEAK[1] (elevation 11,485 feet, Latitude 34° 6′ N.) in southern California has been considered the southernmost glaciated peak in the United States.[2] It is not generally known that a more southerly glaciation occurred on Cerro Blanco (elevation 12,003, Latitude c. 33° 23′ N.) in northern Otero County, New Mexico. Although Stone[3] was unsuccessful in seeking evidences of glaciation in the Sierra Blanca range, Ellis[4] later reported finding a cirque and hummocky morainic deposits on Cerro Blanco, highest peak in the range, and Antevs[5] independently suggested the probability of glaciation on the basis of observations made with field glasses some distance from the peak.

Since the southern limit of glaciation has important climatic, geomorphic and ecological implications, the writers undertook to ascertain the status of glaciation on Cerro Blanco, and, in August, 1940, ascended the peak from both the southeastern and northeastern sides. A single well-developed cirque was found on the peak and occurs on the northeastern side. From the cirque a steeply sloping glaciated valley more than half a mile in length leads down toward the north fork of Rio Ruidoso. Well-defined moraines are present, and there is a pro-talus rampart within the cirque. These facts establish Cerro Blanco as the southern limit of mountain glaciation in the United States.

All the glacial features are fresh and essentially unmodified save by frost weathering, thus indicating Wisconsin age for the glaciation. The complexity of the Wisconsin Stage of glaciation, already reported for the Southern Rocky Mountains,[6] is indicated also by the glacial deposits on Cerro Blanco.

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[6] *Cf.* Humason, *Astrophysical Journal*, 88: 228, 1938.

[1] H. W. Fairbanks and E. P. Carey, SCIENCE, 31: 32–33, 1910.

[2] N. M. Fenneman, "Physiography of Western United States." New York: McGraw-Hill Book Co., pp. 498–499, 1931.

[3] G. H. Stone, SCIENCE, 14: 798, 1901.

[4] R. W. Ellis, *New Mex. Univ. Bull.*, Geol. ser., 5: 1, 24–25, 1935.

[5] E. Antevs, *Proc. Acad. Nat. Sci. Philadelphia*, 87: 306–307, 1935.

[6] L. L. Ray, *Bull. Geol. Soc. Amer.*, 51: 1851–1918, 1940.

## A SUGGESTION FOR THE MAINTENANCE OF SCIENTIFIC ILLUSTRATIONS

DURING the past year various technical publications have announced their inability to retain the blocks, electroplates, etc., used in illustrating their papers (in the case of two entomological journals this year). For the most part, these blocks were to be destroyed, not because of lost value but because the society sponsoring the publication was unable to afford the space necessary for storage of this material.

It has been my fortune to sort through the accumulated illustrations of one of these journals, and most of the material seen would be very difficult to duplicate; some of it could not be duplicated at all. A great many of these plates and blocks would be used again were they available to authors throughout the country. A number of the illustrations are not available in print; I had tried fruitlessly to secure an old copy of a certain paper for several months and had decided that there was no available copy to be had. When I sorted these blocks I discovered the perfect, original electroplates of this paper. It would certainly cost but little to have several copies of these plates printed. So there exists, I believe, a sound reason why these plates should be kept, even if the authors do not claim them.

It would be much to the credit of the country to preserve this expensive and valuable material rather than permit it to be melted for scrap. It is not impossible to collect all the valuable accumulated plates in some central library and make them available, on loan, to authors or to people who wish to reproduce them for study, etc. Could not the Library of Congress or some other responsible institution be persuaded to keep these plates resulting from the nation's private research?

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## CATALOGUES OF CURRENT SCIENTIFIC LITERATURE

IN his recent article, on "The Distribution of the Periodical Literature of Science,"[1] Dr. Atherton Seidell suggests, as a plan to acquaint research workers with the current literature, "the publication of current classified catalogues of the titles of papers appearing in scientific periodicals." For entomological literature, such a plan has been in operation in *Entomological News* (published by the American Entomological Society, at the Academy of Natural Sciences, Philadelphia) since 1890 with few interruptions. The

[1] SCIENCE, 93: 2402, 38–39, January 10, 1941.

issue for January, 1941 (there are ten issues each year) devotes 11½ of its 30 pages to the monthly list of "Entomological Literature," comprising 200 titles under 9 headings, both taxonomic and non-taxonomic. Under each heading the authors' names are arranged alphabetically.

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# SCIENTIFIC BOOKS

## STRENGTH AND STRUCTURE OF THE EARTH

*Strength and Structure of the Earth.* By REGINALD ALDSWORTH DALY. New York: Prentice-Hall. 1940. Pp. ix+434; 83 figs., 69 tables, biblgr., index. $3.50.

ISOSTATIC equilibrium and the strength of the earth's crust are subjects that loom ever larger in connection with problems of geotectonics. Geologists appreciate readily enough the great importance of these subjects, but are somewhat appalled by their magnitude, difficulty and apparent elusiveness. One serious handicap for students in this field has been the scattered and undigested character of the large literature containing the pertinent data. There has been a crying need for summation and evaluation of these data, by an informed geologist, for the use of geologists. The new volume by Professor Daly is an answer to this need. Four fifths of the book is devoted to the growth of the concept of isostasy, the geodetic data on which the concept is based and geologic evidence bearing on the problem. With the factual materials are presented interpretations made by leading investigators. In a final chapter the author makes his own analysis, and suggests a model of the earth that will harmonize with the facts of geodesy and geology.

Hayford's laborious study based on deflections of the vertical, the first quantitative test of an old theory, is explained in some detail. Advantages of the gravimetric method are made clear; a major advantage is the practicability of determining gravity anywhere at sea, where triangulation on which the deflection method depends is impossible. It will be news to some readers that there are as many as five methods of reducing gravity values, all assuming isostatic compensation of topography. The chief advantage of the Hayford-Bowie method, based on the Pratt concept of compensation at uniform depth, lies in the relatively simple calculations involved. Heiskanen has used two forms of the Airy hypothesis, which assumes variable thickness of a light crust. The G. R. Putnam and Venig-Meinesz reductions are based on assumption of regional compensation, which from the geologic viewpoint is more reasonable than strictly local compensation. Anomalies derived by the several methods differ among themselves; and anomalies obtained by any one of the methods can be varied by changing from one spheroid of reference to another. In 1938 Heiskanen proposed a triaxial spheroid, of which the major equatorial axis is 704 meters longer than the minor axis. Daly favors this triaxial figure of reference, and uses it in his speculative model earth.

In 1932 Glennie, of the Survey of India, challenged the entire concept of isostasy as it applies to India. He showed that the crests and troughs of the Indian geoid do not correspond to topography in accordance with Hayford's concept; and that the Hayford anomalies, based on the international spheroid, have a large average negative value for the entire peninsula, with negative values of more than 100 milligals in the Gangetic plain. Using a new spheroid of reference, and assuming that the anomalies reflect strong warping of a heavy crustal layer at depth, Glennie calculated anomalies of a new type—"warp anomalies"—which are positive in a broad east-west belt, negative in flanking belts to the north and south. The average of "warp anomalies" for the entire peninsula is not far from zero. It appears, therefore, that Glennie has demonstrated for India not a lack of isostasy, but broadly regional isostasy. Indeed, his very attempt to explain the anomalies as caused by crustal warping seems to suggest an unconscious assumption that before warping occurred the region was in perfect isostatic balance. Hunter, commenting on gravity conditions in India, suggests that the term isostasy should be dropped, because it has become synonymous with "Hayford isostasy," which is disproved for the Indian peninsula. Daly correctly remarks that Hunter's suggestion is based on a misconception. Isostasy, meaning either the tendency for disappearance of stresses caused by shift of load, or actual equilibrium in the crust, is not confused, in the minds of thoughtful students, with Hayford's artificial assumption of local compensation at a uniform depth.

Daly finds that the average of negative anomalies in India is much reduced if reference is made to Heiskanen's 1938 triaxial spheroid. Anomalies for India given by this reduction are comparable, as a regional group, to those in Fennoscandia, a region of comparable size. There is striking contrast, however, in the behavior of these two regions: Fennoscandia is rising, as if to restore equilibrium, whereas there is no indication that uplift is occurring in India. The distribution of the Indian anomalies suggests strongly that the crust has been warped in front of the Himalayan arc. Possibly orogenic pressure has increased the capacity