

With regard to the genera *Sinocystis* and *Ovocystis* which Dr. Bather would unite, it is regrettable that when he had the actual figured specimens to examine his customary accuracy of observation seems to have been wanting, so that he has been led to doubt the presence of certain characters which I described. Indeed, he candidly admits (*Geol. Mag.* for November, p. 513) that he did not notice one of the structures in question till he had read my memoir and sent back the specimens. It must be accordingly concluded that his remarks are partly based on the casts and figures with their unavoidable defects and limitations. Two points may be specially mentioned. (1) *Sinocystis loczyi*. Of the many specimens of this species which were submitted to me for study, of which only a few were figured, it was observed that only in a very few instances was the summit of the tubercles missing and the diplopores exposed, and that this was due to abrasion, as clearly shown by the condition of the rest of the theca. In both large and small specimens the uninjured surface of both species of this genus possessed a thick layer of epistereom covering the tubercles and concealing the openings of the diplopores. In *Ovocystis mansuyi*, on the other hand, the diplopores were always seen to open freely on the surface, whether the specimens were large or small, worn or undamaged. The good preservation of much of the material which passed through my hands seems to render these facts beyond doubt. (2) The runnels on the surface of *Ovocystis mansuyi*, to which I applied the term "food-grooves" with perhaps too easy an assumption of their function, are more or less distinctly seen in a large number of the specimens which I examined, and are frequently quite conspicuous features impossible to confuse with the normal depressions between the plates of *Sinocystis* or *Ovocystis* itself, though Dr. Bather believes that they are of this nature and devoid of significance. It is true that they have not come out well in the colotype reproductions and much less in the casts on which he relies, but there can be no question as to the existence of these strange and often irregular grooves on the surface, whatever view we hold as to their character. If Dr. Bather had had the advantage of studying the large series of specimens which I had, and of observing the different degrees of development of these runnels, he would not have questioned their existence. Whether the differences between *Sinocystis* and *Ovocystis* are sufficient to separate them generically after taking into account these and other points which I mentioned may be a matter of opinion, but the presence and constancy of such characters have to be admitted.

F. R. C. REED.

CAMBRIDGE.

December 18, 1918.

#### THE GENESIS OF TUNGSTEN ORES.

SIR,—In reply to Mr. J. Coggin Brown's letter in the January number of the *Geological Magazine* on the Genesis of Tungsten Ores I should like to state that my paper on that subject was written in the first two months of 1918. The valuable lecture by Dr. Jones was reprinted in the *Mining Journal* in March, 1918, but

I was unable to see the collected edition of the Tavoy lectures, published at Rangoon, until October, when Mr. J. F. L. Vogel, of High Speed Steel Alloys, Ltd., of Widnes, was kind enough to lend me the copy belonging to his company. I need hardly say that I should have been only too pleased to quote the results of more recent work had such been available at the time. Much of the difficulty of obtaining information no doubt arose from the prevalence of war conditions and the slowness of communications, but it is much to be regretted that geologists who have worked in Tavoy have almost always elected to publish their results in more or less obscure and inaccessible forms; copies of such publications are not always to be found in the principal scientific libraries. May I venture to suggest that the pages of the *GEOLOGICAL MAGAZINE* are readily open to receive either original contributions or abstracts of other publications on matters of such high scientific interest and practical importance?

R. H. RASTALL.

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OBITUARY.

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GROVE KARL GILBERT.

BORN 1843.

DIED 1918.

GROVE KARL GILBERT was born at Rochester, N.Y., on May 6, 1843. He received his early education in the same city and graduated in the classical course at the University there. After a year spent in teaching at Jackson, Michigan, he returned to Rochester, where he was employed for five years as assistant to a well-known dealer in scientific materials. In 1868 he became a voluntary assistant on the Ohio Geological Survey, but his real career may be said to have commenced in 1871, when he joined the Survey of Utah, Nevada, and Arizona; here Gilbert began the field-studies which led to the great work of his life, the investigation of the dependence of physiographic form on geological structure. The earlier publications of this Survey contained his exposition of the fault-block structure of the Basin Ranges and his masterly monograph on Lake Bonneville. In 1876 he explored the Henry Mountains and put forth the now accepted explanation of the peculiar forms of igneous intrusions, introducing the well-known term "laccolith". The report on the Henry Mountains also contains a chapter on land-sculpture, which is a classic of geological literature and the foundation of modern theories of denudation and the development of river-systems.

From 1884 to 1888 Gilbert was employed in the Appalachian region and occupied high administrative posts on the United States Geological Survey. Later he studied many other parts of the United States, including the Great Lakes and Alaska. He published a volume on the history of the Niagara River and a report on Earth-movements in the Great Lakes Region. His observations in Alaska in 1899 led to his introduction of the now universally used term "hanging valleys" with an explanation of their origin.

The physiographic work of G. K. Gilbert must always remain one of the outstanding features of physical geology in the nineteenth