B. J. RYRIE has resigned his lectureship in morbid anatomy and histology at the University of Manchester, on his appointment to the Wernher Beit chair of pathology in the University of Cape Town.

DR. W. HIEBER, of Würzburg, has been appointed director of the department of inorganic chemistry at the University of Jena.

DISCUSSION AND CORRESPONDENCE

SHADOW BANDS

AT the time of the eclipse on January 24 the writer attempted to photograph the shadow bands by means of a motion picture camera. A ground glass screen 60 x 80 inches was mounted between the camera and the sun, about 14 feet from the camera, and the camera was focused on the screen. Credit is due to Dr. J. A. Anderson, of Mount Wilson Observatory, for suggesting this method, which, if the screen has the proper degree of scattering, affords a better illuminated field than can be otherwise obtained.

Unfortunately, the bands were very indistinct in Middletown. The ground, walls of buildings, etc., seen by the waning light of the sun, appeared as if viewed through a rising column of warm air. This appearance is clearly visible on the film. The exposure began two minutes before totality and was continued at intervals until totality commenced. When projected on a screen, the film reveals a fine-grained, quivering, mottled pattern of light and shade, becoming coarser and more ragged as totality approaches.

The writer, who was taking notes near the camera during the exposure, clearly perceived the flickering play of light and shade over his writing tablet, though he could not distinguish any particular direction of motion of the "bands." For a few seconds the tablet was clearly crossed by a series of faint parallel bands, estimated to be about three centimeters apart and a few millimeters wide.

No bands nor definite drift of the "shadows" can be detected with certainty on the film. Similar results were also obtained on the film after totality.

WALTER G. CADY

WESLEYAN UNIVERSITY
MIDDLETOWN, CONN.

SOME COLLOID PHENOMENA IN THE ROCKY MOUNTAINS

THE large amount of limestone in the Rocky Mountain region seems to be responsible for the peculiar bluish tone of color so often noted in glacial streams there; for the softness of this mineral is especially favorable to the formation of colloidal material as a result of glacial abrasion. The torrent which issues from the Victoria glacier towards Lake Louise in the Canadian Rockies has in its upper reaches a milky or brownish cast, the blue shade developing only after the relatively large particles have been deposited, mainly at a spit where the stream debouches into the lake. Some of the small side pools show the bluish cast. Dr. J. H. Mathews informs me that a chain of lakes fed from Arapohoe Glacier, Colorado, show similar progressive color change.

Another item of interest is found at Mammouth Hot Springs in Yellowstone Park. The travertine formation being laid down by the springs at present is amorphous or cryptocrystalline (Jupiter Terrace); while the upper formation, estimated to have been laid down between twenty and thirty thousand years ago, is distinctly crystalline and sparkling. Indeed in walking from the one up to the other, the progressive change can easily be noted, and the wavy formation seen in the new deposits still persists in the old, notwithstanding the crystallization. How often experimenters fail to obtain certain results because they do not wait long enough! But nature has endless time and patience.

JEROME ALEXANDER

NEW YORK, N. Y.

BUSINESS METHODS

I WENT into a large manufacturing establishment, where the latest and best machinery was employed. The manager took me over the place, and introduced me to the famous experts who were in charge of the various details of production. He showed me maps, on which were indicated the routes of his explorers, who went every year in search of raw materials. He took me into the store rooms, where these materials were accumulated in vast amounts. He explained, with much enthusiasm, how the world needed the products of his firm, and proved by excellent arguments that its very prosperity and progress depended upon the supply. He cited the best and most distinguished authorities in support of his opinions.

I could hardly express my wonder and admiration. I said, with emotion, "It is marvelous to think of all these useful products, about to be distributed to the entire world, and of all the good they will do." At this point the manager seemed to hesitate a little, and the smile faded from his face. "The fact is," he said, "we can not afford to market our goods, except to a quite limited extent. It is quite true that they would be of great value, could we get them to the people, but this year's appropriations for marketing were long ago exhausted, and next year's will be even less sufficient." I then said, "What do you propose to do?" He smiled apologetically and said, "Really, we can not do anything."

Where was this factory, and who was the manager? It was the United States Government or any large museum or university in the land! Here is some recent evidence:

"I have two important papers that probably will not see the light for a year or more. Sooner or later we will have to come to the rationing method and apportion to each department so many pages per year."—Letter from one of the most distinguished workers in a large museum, December, 1924.

The United States Printing Office can not or does not nearly meet the requirements of the U. S. National Museum. It is true that the actual printed output is large, but it is not nearly what it would be if all the work done, or capable of being done, were fully utilized.

The *Nautilus,* the American journal dealing with the Mollusca, reporting in the main work done by the National Museum, Philadelphia Academy, etc., has to be subsidized out of the pockets of the editors, and will have to suspend if the support given to it is not increased. (England supports two such journals.)

There is a much older and more famous American scientific journal which is heavily subsidized by the editor, but I am not at liberty to cite the name.

Entomological News, another leading scientific journal, is finding it impossible to continue on the present basis.

Writers of monographs have to split them up and publish the fragments, in order to get any publication at all.

Museums contain valuable materials which are not studied because the results could not be published.

All this is happening in the richest country in the world. Why? Because men of science do not see things in a large way, and do not stand together. Because many, who should be supporting science and education, are absorbed in the pursuit of wealth. Because the results of scientific work have not been presented in a sufficiently intelligible way, and this is partly due to the condensation necessary on account of the conditions described. Democracy can not succeed without publicity, and no one knows what might be done if men of science would unite in the effort to place their goods on the markets of the world. As it is, the hungry public, deprived of the bread of life, tries to find nourishment in cross-word puzzles.

T. D. A. COCKERELL
UNIVERSITY OF COLORADO

ATTENDANCE AT COUNCIL MEETINGS OF THE AMERICAN ASSOCIATION

FROM Professor Henry B. Ward has been received the following justly pointed note: "In the issue of SCIENCE for February 6 I find a list of the Association Council with a supposed record of attendance at the council meetings in Washington. I am reported as having been present at one meeting only, whereas I was present at all meetings and was late at one meeting only. I should not call attention to this matter and request the correction of the record if it were not that the comments in connection with the roll so directly criticize the absentees that I am unwilling to have the error in this case stand uncorrected."

It is unfortunate indeed that such an error as this should have occurred with reference to a council member whose record of attendance and active interest is so uniformly high as is that of Professor Ward. It is of course impossible to explain or excuse the falsification, which has, however, now been corrected in the official records of the permanent secretary's office. Experience demonstrates that the securing of an attendance record for the council meetings is, under the circumstances, not nearly so easy of accomplishment as might be supposed, and when errors do occur it is very fine indeed to have them promptly reported, as in the present instance. The method employed in securing these supposed records of attendance will be still further improved for future meetings and there is hope that errors therein may ultimately be wholly prevented. Errors should be reported to the secretary of the council.

Adverse criticism of absence from the council sessions (see pages 131 and 132 of SCIENCE for February 6) is generally just, and that there should be necessity for such criticism is naturally greatly regretted by the members of the association. The permanent secretary has been more than once instructed by the executive committee of the council to emphasize strongly the great desirability of full attendance at the council sessions. The affairs of the association are always greatly in need of the active interest of all council members.

We are very thankful to Professor Ward for his cooperation.

SAM F. TRELEASE,
Secretary of the Council
BURTON E. LIVINGSTON,
Permanent Secretary.

SCIENTIFIC BOOKS

Studies in Human Biology. By RAYMOND PEARL. Baltimore, Md., Williams and Wilkins Co., 1924, 653 pp.

DR. PEARL'S volume, "Studies in Human Biology," consists of a collection of articles which are in most