a committee to take the necessary steps to urge its need upon the government and the nation. This committee has now been appointed, and the scientific world will follow its activities and their result with close attention. An oceanographical expedition along the lines contemplated, and equipped with the instruments which modern science can provide, would lead to a great increase of knowledge both for scientific study and for profitable development, and no nation could carry it out more appropriately than Great Britain in cooperation with our overseas Dominions. There will be an eclipse of the sun in September, 1922, with the line of totality crossing the Maldive Islands, and the expedition could very well include an astronomical party to observe it. It is believed that the Admiralty is favorably disposed towards the scheme, and every scientific man hopes that the necessary support will be forthcoming to carry out the enterprise on a scale worthy of the British empire."

THE annual meeting of the British Medical Association will be held on July 19, and the scientific sections will meet on July 20, 21 and 22. The annual meeting in 1922 will be held in Glasgow, and the council has now decided to recommend to the Representative Body that the annual meeting in 1923 shall be held at Portsmouth, in response to an invitation of the Portsmouth Division.

THE Rockefeller Foundation announces the gift to the State of Louisiana of the Grand Chenier Wild Life Refuge, comprising about 35,000 acres, in Cameron and Vermillion laboratories, equipment, methods, publications. parishes. The tract was purchased from individual holders by the foundation in 1914, in order to preserve the wild life of the country and has since been under the supervision of the Department of Conservation of the State. A condition of the gift is that the tract shall remain as a perpetual wild-life preserve.

EDUCATIONAL NOTES AND NEWS

THE two weeks' campaign for a $5,000,000 endowment fund for McGill University ended with the collection of $6,321,511.

DR. JOHN GABBERT BOWMAN, president of the University of Iowa from 1911 to 1914 has been elected chancellor of the University of Pittsburgh to succeed Dr. Samuel Black McCormick.

THE Cornell University board of trustees at its meeting on November 13, assigned professors to eight professorships which were established last June commemorating the service of Cornellians in the war. The assignments in science are Professor Ernest Merritt (physics), in arts and sciences; Professors S. S. Garrett and E. W. Schroder, in engineering; Professor W. D. Bancroft (physical chemistry), in the graduate school; Professor Sutherland Simpson (physiology) in the Ithaca division of the medical college.

AMONG recent appointments to the faculty of the college of arts and sciences of Tulane University are the following: Dr. D. S. Elliott, recently head of the department of physics in the Georgia Institute of Technology, has been elected to the professorship of physics. Dr. S. A. Mahood, chemist of the Forest Products Laboratory of the University of Wisconsin, has been elected to an associate professorship in chemistry. Dr. Herbert E. Buchanan, professor of mathematics in the University of Tennessee, has been elected to the chair of mathematics.

MR. J. W. BARTON, recently fellow in psychology in the University of Minnesota and formerly a member of the faculty of the University of Utah, has been elected associate professor of psychology in the school of education of the University of Wyoming.

R. J. GARBER, assistant professor of plant breeding at the University of Minnesota, has been appointed associate professor of agronomy and associate agronomist in the West Virginia University and Station.

DISCUSSION AND CORRESPONDENCE

RECEDENT LAKE SHORES OF THE CRETACEOUS

LAST year while cycad hunting in the southern Black Hills, Mr. E. F. Arnold called my

attention to a remarkable reef of huge concretions in the Lakota of "Driftwood Cañon" several miles northerly through the "rim" from the Burlington dam. The forms simulated huge more or less globular cycads three or four feet through, and displayed much coarse radial structure, with more or less granular siliceous or even sandy, to partly limy texture. As an illustration of these forms, Plate 21 in "Lakes of North America," by I. C. Russell, showing an old lake Lahontan shore, would all but serve. Though knowing the Lakota of the Black Hills so widely, and never having noted anything similar before, I looked on the Driftwood reef as belonging to the domain of the purely inorganic.

Now, however, this phenomenon has come up in a much more tangible form. Early this year Mr. Jesse Simmons, a geologist of the Midwest Refining Company wrote me that he had observed innumerable cycad-like masses in the Lakota [Cloverly] of the Como anticline, about sixteen miles easterly from Medicine Bow, Wyoming. On reaching this point last August I found very striking conditions indeed. There is, fairly speaking, a reef of the calcareous concretionary forms, or tufaceous heads of finely radiate structure. This lies near the top of a sandy to conglomeratic rim 80 or more feet thick resting on the broadly exposed [Como of Marsh] Morrison. The reef stratum itself marks a change in sedimentation, being sandy, to shaly or slightly limy, with the concretions very definitely in the lower portion and varying from quite globular types one to two feet in diameter up to much larger more irregular shaped masses. While immediately within the reef occur numerous smoothed quartz pebbles from small up to several pounds weight. Of these many are simply smoothed or with a ground-glass surface, but many others are polished, and of the type known as "Dreikanter" with the desert "patina." Such are like, though in no way to be confused with the *gastroliths* of the Como or other Dinosaurians.

As showing in a most curious manner the course of events on this reef one of the concretions, a subspherical example one and one half feet through which I packed and sent back to Yale, contains imbedded well toward its center one of the highly smoothed pebbles a half pound in weight. All round this pebble the radiate concretionary structure runs as uninterruptedly, the same as if no pebble were present. Evidently when these siliceous pebbles containing traces of fossils of some earlier geologic period were being smoothed by wind or wave or both, and when the masses of calcareous tufa were being deposited from more or less saturated waters, a wave cast that pebble on top of the first formed basal or squamous rosette. Then the tufaceous mass, with little increase of diameter, continued its growth and regularity of structure upward as before.

Of such tufa reefs as these, and such pebbly shore lines of the western Cretaceous, little is as yet known, and to my knowledge nothing has been reported hitherto. But inasmuch as the general facts seem to indicate conditions not unlike those found about such recedent lakes as Bonneville and Lahontan, it is hoped this preliminary note may call forth much further observation afield. If those who have perchance seen the tufa reefs, and especially the smoothed pebble beaches, would kindly report their observations I would esteem it a favor. It is not improbable that some considerable and synchronous lacustrine shore lines can be definitely located, a result which would be of the first geologic interest.

To what extent algal life has played a part in the growth of these tufas of more remote geologic time is not fully understood. In the case of all the finely radiate tufas there is less likelihood of substitution of any kind than in the coarser Thinolitic type of Lake Lahontan studied by E. S. Dana. It seems unlikely that the masses often of such striking regularity of form could result from purely inorganic processes.

G. R. Wieland

Yale University

Is Honey a Luxury?

In the October 15, 1920, number of Science appeared an article by Mr. J. J. Willaman,