monia formed is collected in the absorption bulb, but quite a large portion of it is dissolved by the sulfuric acid solution. This active constituent in the hydrogen that is evolved at the cathode is probably the ozone form, and is produced perhaps in a manner analogous to the ozone form of oxygen. The percentage of the active gas formed varies with the current density and the concentration of the acid.

Likewise, if a solution of potassium hydroxide is electrolyzed using a high cathode current density the escaping hydrogen contains the ozone form which combines with pure nitrogen to form ammonia.

In the electrolysis of the acid solution the escaping hydrogen contains a fog which persists after the gas has passed through the absorbing solution. This fog is similar to, but less dense than, the fog sometimes produced by ozone when it is bubbled through potassium iodide solution.

This work is a further verification of the theory of Dr. G. L. Wendt that triatomic hydrogen may be produced wherever atomic hydrogen is formed.

A. C. GRUBB

DEPARTMENT OF CHEMISTRY,
UNIVERSITY OF SASKATCHEWAN

SOLDNER, FOUCAULT AND EINSTEIN

IN your issue of August 31, pp. 161–163, you print Dr. Trumpler's defense of Einstein, yet as Trumpler does not touch at all upon one of my leading points, namely, Einstein's ignoring of Foucault's experiment of 1850, which disproved the emission theory of light —my criticism being that Einstein continued to use the emission theory as if it were lawful, whereas it has been outlawed now for 73 years—I will claim only a few lines of your space in order to supply Trumpler's omissions:

1. We do not deem it necessary to reply to Trumpler's labored defense of Einstein; his admissions are sufficiently damaging both to Einstein and to relativity. Soldner's paper bore the title, "Ueber die Ablenkung eines Lichtstrahls von seiner geradlinigen Bewegung durch die Attraktion eines Weltkörpers, an welchem er nahe vorbeigeht"—"On the deviation of a ray of light from its rectilinear motion through the attraction of a heavenly body near which it passes." Let this title speak for itself. I am willing to stand with Dr. P. Lenard, winner of the Nobel Prize in physics, long recognized as one of the leading physicists of our age.

2. Apparently Dr. Trumpler is unable to make a defense of Einstein in ignoring Foucault's celebrated experiment of 1850, showing that the velocity of light is less in water than in air, and therefore light is a *wave motion in the ether,* and is not corpuscular. It seems that Einstein, because he denies the existence of the ether, could not derive Soldner's formula of 1801, without adhering to the hypothesis of emission, that "Light is subject to gravitation." Soldner had a right to use the emission theory in 1801, half a century before Foucault's *experimentum crucis* of 1850; yet in 1911, Einstein was debarred, by every canon of science, from a similar procedure, because Foucault's work 60 years earlier had outlawed the corpuscular theory of light for all time. Thus Einstein's procedure in 1911–16 was wholly unlawful. The *Astronomical Society of France,* in the *Bulletin* for Sept., 1923, will take cognizance of the ignoring of Foucault's celebrated experiment.

T. J. J. SEE

MARE ISLAND, CALIFORNIA

No comment on the following note is required. I might request, however, that after reading it, the reader turn again to my note in the issue of SCIENCE for August 31, 1923, pp. 161–163.

ROBERT TRUMPLER

LICK OBSERVATORY

SIGMA XI

IN SCIENCE for October 5 I find on pages 259–260 a communication making certain statements regarding Sigma Xi.

It is said that "the policy of the Sigma Xi has been to refuse the granting of chapters to state colleges." This view is incorrect. Neither the convention nor the executive committee has ever directly or indirectly adopted any policy excluding or favoring one class of institutions above another. Both the executive committee and the convention have been very careful to consider every application absolutely on its merits. As a matter of fact at least one state college has been granted a chapter. I am confident that there is no prejudice either in the society in general or among the members of the executive committee against state colleges or any other particular group of institutions.

The other statements made concerning Sigma Xi involve comparisons the justification of which must rest on the judgment of the individual, but there are some who would dissent from other conclusions reached by the author of this communication.

HENRY B. WARD,
President

UNIVERSITY OF NEBRASKA

MODERN AND CLASSICAL GREEK

PROFESSOR EDWIN H. HALL has given in SCIENCE, Vol. LVIII, No. 1490, pp. 37–39, an eloquent and just tribute to the memory of his colleague and my admired classmate, Arthur Gordon Webster.

Dr. Hall refers in a footnote to Webster's addressing "in their own tongue assemblies of Greeks in Worcester." It should be stated, however, that this was not classical Greek. Webster succeeded where

one of Great Britain's famous prime ministers failed.

It is quite generally known that the Right Honorable Wm. E. Gladstone was an eminent Greek scholar, regarded as an authority in university circles. It is not so generally known that on one occasion he went to Athens to deliver an address in Greek. It was a long speech seemingly full of eloquent and loud-sounding periods. The audience applauded vigorously, but the applause was due to politeness, not comprehension, as those present thought that the orator was speaking English.

Each commencement we behold some vacant-eyed youth crowned with a *summa cum laude* in Greek, and we wonder as we look at him if he should be dropped down in some corner of Greece, whether he could tell the natives his name and where to take him.

ALEXANDER MCADIE

QUOTATIONS

MEDICAL RESEARCH IN INDIA

THE committee on retrenchment in India, over which Lord Inchcape presided, recommended, among other things, that the payment of research officers from central revenue should cease, and that the grant-in-aid to the Research Fund Association should be discontinued. The association had accumulated 33 lakhs, derived from the Government contribution and earmarked for a new central institute at Delhi; the committee advised that the interest on this sum should be used for the maintenance of medical research. The *Pioneer,* which is commonly credited with being well informed as to the intentions of the Government of India, stated in its issue of June 7 that it was understood that the Inchcape Committee's recommendations regarding the continuance of expenditure on medical research will not be accepted in their entirety. The adoption of the drastic proposals put forward by Lord Inchcape and his colleagues would, our contemporary continues, have involved "the virtual closing down of all research work in India, for, in the face of such a curtailment of activity, the chances of obtaining research workers in the future would have been small indeed. As it is, there is ground for the belief that the policy to be adopted will be that of securing a state of suspended animation. Thus instead of abolishing the appointments of twelve bacteriological officers, as recommended by the Retrenchment Committee, it is proposed to leave six of these appointments unfilled until financial conditions are more favorable. The establishment of a central research institute at Delhi and the grant of five lakhs a year to the Indian Research Fund Association are similarly suspended. This measure of retrenchment will be regretted, but it, at least, will not render the position hopeless, and it provides the retention of a nucleus for expansion when the occasion is suitable. The Directorship of Medical Research has been abolished for the time being, but arrangements are being made for that officer's duties to be carried on departmentally." The *Pioneer* goes on to express the opinion that if its prognostications prove to be correct, the Government of India has been able "successfully to temper its obsession on the subject of retrenchment with a due appreciation of the vital importance of medical research in a country like India." We can only express a fervent hope that this interpretation of the situation may prove to be correct; it does not seem to be a particularly courageous manner of dealing with a matter of so much importance. As we observed when the Inchcape report was first published, it is a paltry piece of economy to cut down the relatively small sum provided for the scientific study of the causes which lead to the high mortality among the 350 millions of the population of India. The amount represents an expenditure of about one twelfth of a farthing a head a year. The wisdom and policy of establishing a central medical research institute at Delhi is, we admit, open to doubt; it may be very much wiser to subsidize provincial institutes and special inquiries. It is easier to destroy than to build up, and even if a nucleus be retained the loss of experienced workers can hardly fail to make the eventual expansion more difficult.—*British Medical Journal.*

SCIENTIFIC BOOKS

Minéralogie de Madagascar, Vol. I and Vol. II. By A. LACROIX. Paris, Augustus Challamel, editeur, Librairie maritime et coloniale, 1922; Vol. I, 624 pp., 27 plates, one physical map in colors; Vol. II, vii, 694 pp., 29 plates and 11 maps in the text, 4to.

THE "Minéralogie de Madagascar," by Prof. Alfred Lacroix, of which the first and second volumes have appeared, is one of the most comprehensive studies of its kind that has been published, and gives us a wealth of information regarding the mineralogy and petrography of France's great island colony.

The first volume is devoted to the geology of the island, the first chapter giving a general idea of its geography (pp. 1–18). In the second chapter (pp. 19–148) the various geological aspects are described at considerable length under the sub-headings, "Region of Crystalline Schists" (pp. 19–51); "Sedimentary Formations" (pp. 52–56); "Intrusions and Post-liasic developments," "Recent Volcanoes" (pp. 77–150). This is followed by a section devoted to the mineralogy of the island (pp. 151–604).

The second volume treats of applied mineralogy, mining, etc. (pp. 1–218), of lithology (pp. 219–576).

The writer begins by noting that, after New Guinea and Borneo, Madagascar is the largest island of the