patronage of Edinburgh Royal Botanical Gardens to the Crown, and to unite the Regius professorship and the University professorship of botany.

DISCUSSION AND CORRESPONDENCE.

THE BRUCE ASTRONOMICAL MEDAL.

To the Editor of Science: Miss Catherine Wolfe Bruce, of New York city, to whom astronomy all over the world is indebted for liberal and intelligent benefactions, proposes to found a gold medal to be awarded not oftener than annually by the Astronomical Society of the Pacific for distinguished services to astronomy. The medal is to be international in character and may be given to citizens of any country and to persons of either sex. The design for the obverse of the medal is the seal of the Astronomical Society of the Pacific. The medal is to be 60 mm. in diameter. The reverse is to bear this inscription: "This medal founded A. D. MDCCCXCVII. by Catherine Wolfe Bruce is presented to—(name)—for distinguished services to Astronomy——(date)."

The Astronomical Society regularly awards also a bronze medal founded in 1890, by the late Joseph A. Donohoe, for the discovery of each unexpected comet.

Edward S. Holden.

Lick Observatory.

PROFESSOR SCOTT'S BIRD PICTURES.

In *Scribner's*, for April, Professor W. E. D. Scott 'scores the conventional method of bird-stuffing, and furnishes eight pictures of birds which are stuffed according to his own ideas.' Now, Professor Scott speaks from long experience, and what he says is largely, but by no means wholly, to the point, for much of our museum work *is* undoubtedly bad. Whether or not the pictures which illustrate the article and are held up as examples for us to follow are any great improvement over our more recent bird work is very questionable. It might seem ungracious to criticise these pictures of stuffed birds, but when our attention is called to them by aggressive italics and special postal cards criticism would seem to be invited. It therefore becomes a painful duty to say that the Clapper Rail and Robin are certainly not in conventional attitudes and that aside from these at least three of the birds are decidedly faulty, these, moreover, being birds with which Professor Scott should be most familiar. The Bittern, p. 503, is so poised that he seems about to topple over backward, while his neck and free foot are both wrong. Ward's Heron, p. 501, and the Little Blue Heron, p. 502, both have curves in their necks which, from the structure of their backbones are *physically impossible*. The shape and articulation of the neck vertebræ of herons is such that they *always* have more or less of an angular bend in their necks, whether these be extended vertically or doubled upon themselves, and failure to reproduce this very characteristic feature means failure to convey a correct idea of a heron. We may accept Professor Scott's strictures, but we decline to follow his models.

F. A. Lucas.

NOTE ON A SIMPLE METHOD FOR NEWTON'S TOTAL REFLECTION EXPERIMENT.

Demonstrators who have written for their fellows seem to have overlooked the fact that Newton's beautiful experiment, showing that for any pair of media each color having its own index of refraction has, therefore, its own critical angle, may be exhibited by much more simple and inexpensive means than the four prisms usually required for that purpose.

All that is really necessary beside the lantern or other means for getting a strong sharp parallel beam is a refraction tank, such as Wright's, having glass ends. If this tank is set up in the path of the beam in such a manner that the light may be made to pass obliquely upward into the water as for total reflection it will be found that, by adjusting the depth of the water in the tank and the angle of incidence of the beam, the apparatus can be so arranged that only red rays will emerge, all others being totally reflected. Now, by diminishing the angle of incidence of the pencil on the air surface, tilting the mirror if one is used, the remainder of the spectrum may be brought in order out of the water, and, by reversing the operation, sent back again totally reflected. Just as in the demonstration in which the right-angled prisms are employed, the image of the