

have each his own laboratory and rooms where research may be conducted under his supervision.

4. That the scheme of any course of lectures delivered at the institute, whether by the director, the lecturer on bacteriology, or anyone else whom the council may appoint, be submitted to the council for their approval.

5. That the director should exercise a general supervision over the conduct of the institute, and be responsible for it to the council.

6. That all matters of expenditure at the institute should pass through the hands of the director, and that he should be entrusted with the appointment and dismissal of the servants of the institute.

7. That anyone desiring instruction at the institute, or wishing to engage in original research there, should make application to the director, who should have power to admit him.

8. That the director should present to the council a quarterly statement of the work carried on at the institute, and furnish a written annual report.

9. That leave of absence be granted by the council to the director and the lecturer on bacteriology, on the understanding that in each case an efficient substitute, approved by the council, be provided.

(Signed) H. E. ROSCOE.  
VICTOR HORSLEY.  
J. LISTER.

#### Electromotive Force from the Light of the Stars.

ON the invitation of Mr. W. E. Wilson, I came here a few days ago for the purpose of trying whether it was possible or not to obtain measurable electromotive forces from the light of the planets and of the fixed stars. The sensitive cells which we employed are seleno-aluminium-cathol cells, and (excepting the liquid) are the same as the seleno-aluminium-acetone cells which I described in the *Phil. Mag.* for March, 1892.

Last night was the only one on which observations were possible; and, owing to the state of the weather, it does not seem likely that, in the time at our disposal for joint-work, any more photo-electric measures can be made. The result of last night's work is to prove that the electromotive force of starlight is easily measurable.

The electrometer which we employed is Clifton's form of the quadrant electrometer of Lord Kelvin. It was placed in a room beneath that in which the telescope is fixed, and was thus kept quite dry and free from draughts. The telescope is Mr. Wilson's two-foot reflector; and the photo-electric cell, attached to a cell-carrier, was connected with the telescope in place of the eye-piece, and could be moved into or out of the image of the star at pleasure. The poles of the cell were connected with those of the electrometer by naked but well insulated fine wires led through a hole in the floor of the observatory. The area of the sensitive plate in the cell is about 3 square millimetres.

An E.M.F. of 1 volt was represented by 460 divisions of the scale, and the light of Venus gave about 40 divisions. Only about one quarter of the disc of the planet is at present illuminated, so that the E.M.F. of the whole light of the planet would have been represented by 80 divisions. [The square of the E.M.F. is proportional to the incident energy.] Thus the light of Venus concentrated by this telescope is represented by about 17 volts.

With Jupiter about 14 divisions on the scale were obtained; but no conclusion can be drawn from this, because the image of Jupiter covered much more than the area of the sensitive plate. Hence the energy of his light corresponds to a much larger number than that given.

From the light of Sirius we obtained an E.M.F. of about 0.2 volts (a little over 9 divisions on the scale).

An attempt on Aldebaran was not productive of any certain result, and was interfered with by an accident to the cell.

However, we consider that we have succeeded in our object, and we hope that, with a slightly improved cell-carrier and a much more sensitive electrometer, results will be obtained from the lights of a large number of fixed stars.

I would observe, in conclusion, that the relative values of the lights of Venus and of Sirius as given in the "Encyc. Brit." ("Photometry"), are most probably erroneous. It seems to me that the light of Venus very much exceeds the value there given.

GEORGE M. MINCHIN.

Daramona House, Westmeath, January 8.

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#### THE THYROID GLAND.

(WITH APOLOGIES TO MRS. HEMANS).

"WE hear thee speak of the thyroid gland,  
But what thou say'st we don't understand;  
Professor, where does that acinus dwell?  
We hashed our dissection, and can't quite tell.  
Is it where the macula lutea flows,  
And the suprachoroidal tissue grows?"  
—"Not there, not there, my class!"

"Is it far away where the bronchi part,  
And the pneumogastric controls the heart?  
Where endothelium endocardium lines,  
And a subpericardial nerve intertwines?  
Where the subpleural plexus of lymphatics expand?—  
Is it there, Professor, that gruesome gland?"  
—"Not there, not there, my class!"

"I have not seen it, my gentle youths,  
But myxœdema, I'm told, it soothes.  
Landois says stolidly, 'functions unknown':  
Foster adopts an enquiring tone.  
Duct does not lead to its strange recess.  
Far below the vertex, above the pes,  
It is there, I am told, my class!"

R. M.

#### NOTES.

PROF. ERNST HAECKEL completes his sixtieth year on February 16 next. On the following day a marble bust of him is to be placed in the Zoological Institute at Jena. Dr. Richard Simon, of Jena, is the treasurer for the fund opened for this purpose, and the following Englishmen are on the general committee:—Mr. F. Darwin, Dr. Gadow, Prof. Huxley, Prof. Ray Lankester, Sir John Lubbock, Prof. Alfred Newton, Mr. Poulton, Mr. Adam Sedgwick, Mr. Sollas, Mr. Herbert Spencer, and Sir Wm. Turner.

THE competition for the prize of 500 francs, founded by De Candolle for the best monograph on a species or a family of plants, has been opened by the Société de Physique et d'Histoire Naturelle of Geneva. The memoirs may be written in Latin, French, German, English, or Italian, and should be sent to the President of the Society before January 15, 1895. Members of the Society are not admitted into the competition.

M. MAREY has been elected vice-president of the Paris Academy of Sciences for the ensuing year.

THE death is reported, at Vienna, on December 2, 1893, at the age of 62, of Dr. J. Boehm, well known for his researches on the circulation of the sap in plants.

THE death is also announced of Baron K. von Küster, eminent in botanical circles; of M. Quinquand, known for his investigations on nutrition and toxicology, and other important physiological works; and of Dr. Heider, Privatdocent in Hygiene in Vienna University.

WE regret to record the death of Herr W. von Freeden, which occurred at Bonn, on the 11th inst., after a short attack of inflammation of the lungs. Herr v. Freeden is best known to science as the founder and first director of the Norddeutsche Seewarte of Hamburg, which in 1875 was developed into the Deutsche Seewarte, under Dr. George Neumayer. Herr v. Freeden was born at Norden, in Hanover, in 1822; he was first appointed Teacher of Physics and Modern Languages at the Gymnasium at Jever, a post which he exchanged for the Headmastership of the Navigation School at Elsfleth, near