

the gardens of the Royal Botanic Society, Regent's Park, on July 23 and following days? It will be open to colleges and schools of every grade, and the exhibits will include all that bears upon Nature-study. Happily the project has secured very influential support, and has aroused considerable interest.

Sir John Cockburn, K.C.M.G., is chairman of the executive committee, and Mr. Charles Savile Roundell, of 7 Sussex Square, Brighton, is hon. treasurer.

I shall be happy to furnish full particulars, or to meet anyone, who may wish to see me personally, at any time by appointment either at the Botanic Gardens or in St. James's Street, S.W.

JOHN C. MEDD
(Hon. Sec. *pro tem.*)

Stratton, near Cirencester, March 19.

Sounds associated with Low Temperatures.

THE accompanying extract from a letter recently received from Norwich raises a question that I cannot answer. I have never experienced the fact named. Have any of your correspondents ever done so?

W. H. PREECE.

"On February 18 the temperature went down to zero here. As my son walked about the sheds, he was struck by the whistling noise the ground made, which he says he has noticed each time such an extremely low temperature has occurred, and he reminded me how we had once noticed it together a great many years ago. Now what makes that whistling, and does it always accompany a zero frost?"

Proofs of Euclid I. 5.

I REGRET that in my letter of March 13 (p. 439, line 4) the letters A, B were inadvertently used by me instead of B, C.

I have tried Mr. Croome-Smith's proof (NATURE, March 20, p. 466) on a class of beginners, but it is difficult to convince them that, in the words of the professional conjurer, "there is no deception."

A non-mathematical friend has just written, pointing out that so long as we define a square as a four-sided figure having all its sides equal and all its angles right angles, it is somewhat inconsistent to trouble the beginner with proving properties of an isosceles triangle the truth of which he can readily see for himself at a glance. Either we should make him prove the properties of a square or we might just as well define an isosceles triangle as a triangle having two sides equal, and the angles opposite these sides equal.

G. H. BRYAN.

THE NATIONAL PHYSICAL LABORATORY.

THE Prince of Wales, who was accompanied by the Princess, formally opened the National Physical Laboratory on March 19, in the presence of a distinguished company of men of science and others interested in national progress. In declaring the laboratory open, His Royal Highness said:—

I am glad that my first duty as a Fellow of the Royal Society should be to join with my distinguished brethren in opening this institution, the direction and administration of which have been entrusted to the Society by the Government. It is also a great pleasure to assist in the inauguration of what may fairly be called a new departure, for I believe that in the National Physical Laboratory we have almost the first instance of the State taking part in scientific research. The object of the scheme is, I understand, to bring scientific knowledge to bear practically upon our everyday industrial and commercial life, to break down the barrier between theory and practice, to effect a union between science and commerce. This afternoon's ceremony is not merely a meeting of the representatives of an ancient and world-renowned scientific society for the purpose of taking over a new theatre of investigation and research. Is it not more than this? Does it not show in a very practical way that the nation is beginning to recognise that if her commercial supremacy is to be maintained greater facilities must be given for furthering the application of science to commerce and manufacture? In the profession to which I am proud to belong there are, perhaps, special opportunities of gaining a certain insight into the general trade and commerce of the world and of comparing the

commercial vitality of the different countries. And certainly abroad one finds an existing impression, which was confirmed by the experience of my recent and interesting colonial tour, that the superior technical and scientific knowledge of our foreign competitors is one reason why our hitherto preeminent position in manufactures and commerce is so considerably threatened. As a simple example I may quote the opinion of an expert authority in Australia, that the aniline dyes of Germany had given to a certain class of German-made goods a decided superiority over those of British manufacture. In Germany and America much valuable work has been carried out by the State. In this country the Government have provided these buildings and found machinery for the supply of light, heat and power. They are at present not inclined to spend more money upon equipping the laboratories. It is therefore to the liberality of the public that we must look, not only for money, but for presents in machinery and necessary appliances. Already the institution has benefited in the latter respect by gifts from Sir Andrew Noble, the Drapers' Company, Messrs. Willans and Robinson, Lady Galton, and others. The old-established Kew Observatory now forms part of the laboratory. Important and growing work is carried out in the testing of telescopes, binoculars, sextants and, more particularly, telescopic sights for the Navy. Most of the scientific outfit supplied for the Antarctic expedition was tested at Kew. The laboratory will also supply a want which is much felt for standardising and testing the many other forms of apparatus in daily use, while investigations will be carried out on points of importance to the manufacturer or the merchant from the solution of which valuable results may be expected to accrue. I am particularly pleased to know that it is possible that within the precincts of this laboratory there will be established a work of the utmost importance—namely, a tank after the design of the late Mr. Froude, in which the performance of a ship can be predicted from experiments on a model. At present there is such a tank at Haslar, which is fully occupied in Government work. The Institution of Naval Architects, impressed with the demand for this work, have proposed to raise the sum required to erect the tank and for the necessary appliances. But the funds at present at the disposal of the laboratory will require to be considerably supplemented if they are to undertake this much-needed work. No doubt the working expenses of the tank will ultimately be met by fees. But a difficulty may arise in tiding over the interval which must elapse before such fees are available. I am confident that, through the generosity of the public, the necessary means will be forthcoming to meet these difficulties and to secure that which is almost an essential to the ship-building industry of a country possessing the largest mercantile marine in the world. Before such an audience I have not presumed to speak of the value to science of this institution. Though the Navy has given many notable names to scientific theory, it is the practical results which naturally appeal more to the mind of the sailor, and I am sure you will accept this as my excuse for having ventured to make my few remarks upon the future of this institution from merely a utilitarian point of view.

At the close of the ceremony, in responding to the vote of thanks, the Prince of Wales announced that Sir William Armstrong, Whitworth and Co. had promised to subscribe 1000*l.* towards the funds of the laboratory; and he expressed the hope, which all of us share, that this excellent example will be promptly followed by other manufacturing firms. We give below some particulars of the work already instituted at the laboratory.

The opening ceremony took place in the engineering laboratory, in which about 900 guests were accommodated. This had been cleared for the occasion, and the only machines left in position were a shaping machine by Baker and Co., of Halifax, and a ten-ton testing machine. The latter is one of Messrs. Buckton's vertical machines. The stress is applied direct by means of a hydraulic ram worked off the main, in which there is about 200 feet of water pressure, so that no intensifier is necessary; the supply from a small cistern fixed to the wall is sufficient to bring the ram back when the pressure is relieved. The machine is intended primarily for experimental work in connection with the alloys research; for this it has conveniences which a more powerful instrument