

sun, which finally has its centre of motion in a "central" sun. "The evidence of the existence of the central, polar, and equatorial suns is found in certain observed phenomena, hitherto attributed to other causes, but which are in reality due to their presence and influence." Besides the simple enumeration of these phenomena, it is in vain to look for any direct proof of this statement. The author's method of removing objections to his theory, one of the principal objects of this book, is, however complicated in detail, extremely simple in principle. It practically consists in calling a motion, or an absence of motion, when it does not fit in and support his theory, *apparent*, and when such motion can be explained, or Dr. Pratt considers is explained, *real*. Such juggling with phenomena resulting from a combination of revolution and rotation, naturally presents no difficulty to a man who cannot see that a body revolving in an orbit, and always presenting the same face to the centre of the orbit, rotates once in the period of revolution. But others, taught in a different and more rigorous school, have great difficulty in apprehending the author's meaning, and fail altogether to appreciate the arguments by which he seeks to support the successive parts of his theoretical system.

Neither does Dr. Pratt understand the arguments, nor, as far as we can see, admit the facts, by which the gravitational theory is supported. In the third chapter, the author, in criticising our current ideas of planetary motion, discloses the awkward fact, that he has not the slightest acquaintance with Kepler's laws. He has not taken the trouble to master the first principles of the system he would overthrow, but seems to think himself qualified by inspiration to offer another. His inspiration, we fear, is due to a disordered and ill-regulated imagination.

LETTERS TO THE EDITOR.

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The Physical Properties of Argon.

THE following measurements may be of interest in connection with the chemical position of argon. The gas was prepared from atmospheric air with the aid of oxygen and alkali only.

Weighings at 0° C. upon a large scale (two litres), and with the apparatus formerly employed for other gases, give as the density of argon ($O_2 = 16$)

$$19.940,$$

a number in almost exact agreement with that obtained by Prof. Ramsay, working upon a relatively small scale and with gas derived by magnesium (Rayleigh and Ramsay, *Phil. Trans.*, 1895).

In spite of its greater density, the refraction ($\mu - 1$) of argon is only .061 of that of air; so that if we take for air under standard conditions $\mu = 1.0002923$, then for argon

$$\mu = 1.000281.$$

Terling Place, July 20.

RAYLEIGH.

The Teaching University for London.

I WAS absent from the country during the University of London Election; but I may be permitted to make a few remarks on Sir John Lubbock's letter in the last number of NATURE.

I am afraid he has hardly weighed the very serious consequences of the action he has taken. They will have to be met as best we may. What I now desire to consider is some of the grounds on which he has attempted to defend it. These themselves afford matter for sufficiently grave reflection.

(i.) Sir John states in his letter to Prof. Rücker: "I am not asking that any privilege which they do not at present possess

should be conferred on my constituents, but only supporting what is now their legal right. . . . This right I know they highly value." This is a most extraordinary statement. What Convocation undoubtedly possesses is the right of veto on any fundamental change in the constitution of the University. It has been exercised in the past to some effect when Convocation summarily rejected the recommendations of the first of the recent Commissions. It might have been exercised when Convocation assented to the admission of women to the University. But it has never hitherto been exercised except by the personal vote of members attending Convocation who have had the opportunity of hearing in adequate debate the arguments for and against the proposal at issue. What Sir John proposes now is something widely different: a *referendum*, in fact, in which the decision of Convocation is to be signified "as at a Senatorial election," i.e. by voting papers. In my judgment such a precedent, if once established, would utterly destroy the prestige and authority of the meetings of Convocation as at present constituted. To this point I will return presently. But at any rate I think it will be admitted by all who know anything of the practical working of this body that Sir John's proposal is a pretty revolutionary change. How then are we to reconcile it with his language which I have quoted above.

(ii.) But Sir John's action becomes still more extraordinary in the light of the actual recent proceedings of Convocation itself. To read his letter it might be thought that we were smarting under a sense of injury and injustice, and that Sir John, as in duty bound, had come chivalrously to the rescue of our oppressed body. Far from this being the fact, I think, that in plain language Sir John has given Convocation the severest slap in the face it has ever received.

After the report of the first Commission was dead and buried, the second came up in due course for consideration by Convocation, and for the past two years its mind has been occupied with little else. The report might have succumbed to the veto like its predecessor, but it did not. I need not recapitulate all that has happened. It is enough to say that though Convocation approached the conclusions of the Commission with a certain timidity or, at any rate, reserve, their substantial acceptance after each successive debate steadily gained ground.

Finally at the meeting on January 22 of the present year the following resolution was carried:—

"That Convocation, while desiring to express generally its approval of the proposals contained in the Report of the Royal Commission, is of opinion that power ought to be given to the Statutory Commission to vary the details of the scheme, and that it ought to be made an instruction to the Commissioners, before framing the statutes and regulations, to confer with duly accredited representatives of the Senate and of Convocation, as to the modifications which may be desirable."

Now whatever be the opinion of different sections of Convocation on the general merits of the question, I think that we are all agreed as to the latter part of the resolution. Convocation regards the Report as a possible basis for reconstruction, but declines to pledge itself to all the details. But it is most important to observe, and it was most clearly pointed out in the debate, that in adopting this resolution Convocation *waived its right of veto*. In other words it dropped its possible *non possumus* and looked to negotiation to attain what it wanted.

This resolution was followed by a further one, which was its necessary executive corollary. I may be permitted to extract the whole from the minutes, as it is significant to observe that it was moved and seconded by a representative of either side.

"On the motion of S. P. Thompson, D.Sc., B.A., seconded by T. B. Napier, LL.D. Resolved:—

"(1) That a Special Committee of nine members, including the Chairman of Convocation, be nominated to prepare for presentation to the Statutory Commission, when appointed, a memorandum of points in the Scheme of the Royal Commission in which modification is desirable, and with power to confer with such said Statutory Commission, and with any Committee of the Senate.

"(2) That this Special Committee consist of the following Members:—The Chairman of Convocation, Dr. Allchin, Mr. Bompas, Mr. Stanley Boyd, Dr. Cave, Mr. Cozens-Hardy, Mr. Thiselton-Dyer, Dr. Napier, Dr. S. P. Thompson."

Now I put it to Sir John, who, though I am glad to say not "an old," is certainly an experienced "parliamentary hand," whether the action he has taken is exactly courteous to Convocation in general or to its formally constituted Committee in particular.