

There remains the question of finance, which we have from the beginning recognised as the really serious question. This has been complicated, unnecessarily we believe, by a comparison of the supposed value of the present King's College site with the Bloomsbury site; but if the former is, as appears to be admitted, inadequate for its purpose, a comparison of site values seems beside the point, and it is surely no derogation to a good bargain that both parties derive benefit from it. The criticism that the Government should continue to be responsible for rates and maintenance charges is of a different kind. Here we think the Senate was on strong ground, and we are glad that it has elicited from Mr. Fisher a statement that these charges will continue to be borne by the Government.

We are glad, too, to see the explicit declaration of the President of the Board of Education that acceptance of the Bloomsbury site will not close the door against building grants from the Treasury. Apart from the technical obstacle to a Government pledging its successors to expenditure for this purpose, it is, we think, apparent that at the present time the Government, faced with demands for economy, might well hesitate to promise unconditionally a large sum for buildings. On the other hand; we are convinced that if the University embarks in earnest upon the provision of a building, neither this nor any future Government could or would withhold its support.

We can only repeat our most earnest hope that the University will decide to accept the Government's offer. The present time may not be the most propitious for embarking upon an appeal for funds, but we are convinced that a courageous policy is the right one, and that the Senate, if it fails to take advantage of the opportunity now offered to it, will have done a serious injury to the future of the University, and lost for many years any claim upon the Government or the public.

### Women at Cambridge.

**A**T Cambridge to-day, October 14, is to be held the official discussion of the proposal to admit women to the membership of the only University in the Empire which gives women no rights. Weeks of somewhat bitter fighting in the Press will follow, and the vote should be taken towards the end of this term or early next term. We will for the moment consider only how the interests of scientific teaching and research are affected by the proposals.

NO. 2659, VOL. 106]

Two reports are to be presented for discussion. Report A proposes a simple statute for adoption, the net result of which is to give women the same opportunities and rights within their own colleges as men have in theirs. They will, as at present, attend the regular courses of teaching in the University and take the University examinations. There will, however, be this difference: success in the examinations will secure for them a degree, as in the case of men students, and women will be able to compete for University prizes, scholarships, and studentships from which they are now debarred. The degree will secure for them in due course, as for men, voting power in the University; at present they receive only the Parliamentary vote for the University member, and a place in a published class list in return for success in the University final examinations. Thus it is proposed that an anomalous and unsatisfactory state of affairs should be ended, and equality of opportunity secured for men and women inside the University. Provision is rightly made in the proposed statute to secure the rights of past students of Girton and Newnham to degrees.

As regards the colleges, the supporters of Report A recognise fully the need to guard against men and women both being members of the same residential college. They therefore propose that the University shall refuse to recognise in any way a woman as a member of a men's college or a man as a member of a women's college. The University has no power to stop a men's college from admitting a woman, but it can see to it that a woman shall gain nothing, so far as the University is concerned, by joining a men's college, and that is what Report A provides for. It should be added that, in this matter, full support is given by the authorities of Girton and Newnham Colleges. The bogey of the mixed college is conjured up only by the supporters of Report B in the hope of securing votes for their scheme. At any rate, they suggest no steps to guard against it.

By the alternative scheme proposed in Report B, the University is to give its blessing to the foundation of a women's University at Cambridge, and to express a desire to continue to afford to students of the new University the privileges as regards instruction, examination, and access to libraries, museums, and laboratories which are at present accorded to students of Girton and Newnham Colleges. This gives the women their degrees, not of Cambridge University, but of a new University at Cambridge. There are arguments on both sides on this point based on senti-

ment. One real grievance, at any rate, is partly met. No guarantee is, however, offered that existing facilities generally given to women will be continued. They are now admitted to laboratories and lectures only by the courtesy of professors and other teachers. Cambridge is at present suffering from severe pressure on its accommodation. Under Report B women might well be crowded out from laboratories to make room for members of the University—this is fully recognised by the supporters of Report B; that is to say, the report amounts to a desire to assist in the teaching of women so long as the number of men students leaves room for them and no longer. It is no wonder that the councils of the women's colleges at Cambridge have emphatically repudiated such a scheme, and have declared that if Report B is adopted at Cambridge they would take no steps to promote the incorporation of Girton and Newnham Colleges as a separate University. It is no longer possible, in our view, for a university, in sorting out its excess applicants for entry, to take sex as the first and supreme test: intellect and the needs of the nation are both safer tests in the interest of the university and of learning.

One more point in which Report B singularly fails to make good the claims of its supporters may be briefly mentioned. As regards the admission of women to the men's colleges, and through the colleges to the University, it leaves the door wide open as it has stood since the Sex Disability (Removal) Act. It is Report A, and not Report B, which takes safeguards against what is admitted on all sides to be undesirable. It is Report A which, with this precaution, gives women the fullest equality of opportunity with men inside the University.

### Lunar Tables.

*Tables of the Motion of the Moon.* By Prof. Ernest W. Brown, with the assistance of Henry B. Hedrick. Sections i. and ii., pp. xiii + 140 + 39; section iii., pp. 223; sections iv., v., vi., pp. 99 + 56 + 102. (New Haven: Yale University Press; London: Humphrey Milford; Oxford University Press, 1919.) Price, 3 vols., 4 guineas net.

THE appearance of Prof. E. W. Brown's lunar tables marks the accomplishment of an arduous task of the highest importance to astronomy. In the two centuries which have elapsed since the time of Newton more than a score of tables have been published. The majority of them naturally belong to the eighteenth century, and

no longer possess any practical interest apart from the theories on which they were based. If they did not always mark any very distinct advance in accuracy beyond their predecessors, they generally aimed at including a greater number of inequalities more precisely determined, and systematic observation of the moon was all the time accumulating the material which could be used for comparison with theory and the better determination of the fundamental constants. Newton himself discussed eight lunar inequalities. Euler in his memoir of 1772 included twenty-one inequalities each in the longitude and the radius vector and sixteen in the latitude. This was only a beginning. As time went on and the standard of achievement grew more exacting it is not surprising to find that the number of men who possessed both the ability and the patient energy to elaborate complete and independent theories of the moon's motion and to reduce them to the form of practical tables became notably smaller. Thus when Burckhardt's tables of 1812 had once been adopted in such annual publications as the Nautical Almanac, overcoming the rival claims first of Bürg and later of Damoiseau, they continued in use for the best part of half a century, although their deficiencies ultimately amounted almost to a scandal, and their form rendered it particularly difficult to reconstruct the underlying theory and to apply the needful corrections. A serious error in the parallax according to these tables was found and corrected by Adams.

The Greenwich lunar reductions undertaken by Airy, by which the results of eighty years' observations were made available, proved the need for greatly improved tables, and provided the most valuable material on this side for making an advance. By that time it was known that Hansen was engaged in lunar researches having for their ultimate object the preparation of entirely new tables, and their appearance was eagerly awaited. But for a time difficulties threatened to intervene. Born in Schleswig in 1795, Hansen is an outstanding example of that singularly rare class, the self-taught mathematician. Owing nothing to academic education, he succeeded Encke in 1825 in the direction of the observatory at Gotha, and thereafter until the end of his long life refused all offers of preferment, though observatory and stipend were alike of the most modest. In these circumstances he received help from the Danish Government, but when this was discontinued in 1848 owing to financial stringency and the steady progress of the work was in danger, the British Admiralty came to the rescue on the representation of Airy in 1850, and not only provided the comparatively small sum needed to complete the