

while doing so. Facilities available at one of the universities only may thus be made available for common use, and studies of insufficient general interest to make it worth while for each university to have its own department need not be duplicated; it is possible that some existing duplication can be eliminated and the funds thus set free used for urgent needs. At first sight, this proposed innovation seems a great break with the traditions of the older universities; but there is no doubt of its excellence in principle. The college authorities, it is expected, will be less in favour of it than the university, but this is probably all to the good. They will see to it that the proposed freedom to migrate for a term or more will not be abused; that, in fact, only those who will greatly benefit by the change will be encouraged to enjoy it. With respect to facilities for instruction and research in science, it is likely that Oxford students will benefit more than Cambridge from the new proposal, at least at the undergraduate stage. The honours man at Oxford in science has generally but one subject to specialize in and consequently has time to take extra courses elsewhere; at Cambridge he is partly occupied with other subjects: and, of course, at Cambridge facilities for work in science are on a much more generous scale than at Oxford.

#### Research in Social Studies

THE Vice-Chancellor also spoke encouragingly of the scheme for research in social studies at Oxford made possible by the five-year grant from the Rockefeller Foundation which has now been in operation for a year. An institute of statistics has been started, several research lecturers have been appointed, and promising schemes of combined research in Colonial Government, in politics, in social services, and in economics have been begun. The first year of the experiment has been a great success. Research activity in other humane studies is also increasing remarkably. Since 1931 the number of those working for research degrees in the humane faculties has risen from 145 to 256.

#### Rhodes Memorial Lectures: Dr. E. Hubble

THE Rhodes Memorial Lectures at Oxford will be delivered during the Michaelmas Term by Dr. Edwin Hubble, of the Mount Wilson Observatory. They will be given at 5 p.m. on October 29, November 12 and November 26 in the Milner Hall of Rhodes House, Oxford. The lectures will bear the general title of "The Observational Approach to Cosmology", and will deal in turn with the observational characteristics of that region of the universe accessible to telescopes now in operation, secondly with empirical tests of the physical nature of the spectroscopic 'red-shift', and finally in the third lecture with the possible models of the universe which follow from the previously established interpretation of 'red-shift'. Dr. Hubble, who is himself a former Rhodes scholar, is well known in England. As a result of his discovery of Cepheid variables in the extra galactic nebulae, and his determination of their periods, nebulae such as those in Andromeda were first definitely revealed as systems

of stars comparable in dimensions with the huge galactic system of which our sun is a part. Working out from the nearer of these objects, and using his own determinations of their apparent luminosities, Hubble was enabled by statistical methods to find the distances of these objects in a volume of space of 300 million light years radius; from these distances and the velocity determinations of Slipher and Humason, he first established in 1929 the existence of a linear relation between distance and velocity (assuming the observed spectroscopic 'red-shift' to be due to Doppler effect).

HUBBLE'S law, it need scarcely be added, is basic to all discussions of the expanding universe, whether in the relativistic form of Lemaitre, Eddington and de Sitter, or in the kinematic form of Milne. As clearly set out in his Halley Lecture at Oxford in 1934, Hubble himself, however, has been led to seek whether there do not exist observational methods of determining whether this 'red-shift' is due to a velocity of recession, or to some other, as yet unspecified, physical cause. There will, therefore, be a widespread interest in his Rhodes Memorial Lectures, not only because they will reveal the conclusions which he has reached in this matter, but also because they may be expected to show the results of the furthestmost exploration of the universe which can be carried out with the existing instrumental equipment.

#### Radcliffe Travelling Fellowship in Astronomy

THE Board of Visitors of the University Observatory, Oxford, is inviting applications for the Radcliffe travelling fellowship in astronomy. This new fellowship in observational astrophysics, open to all suitably qualified astronomers irrespective of nationality, carries an annual salary not in excess of £700, the exact amount of which is fixed by the Board. The fellow will divide his time approximately equally between the new Radcliffe Observatory in Pretoria with its 74-inch reflecting telescope, and the University Observatory, Oxford, with its new solar equipment, and will work on problems of his own choosing in observational astrophysics. The tenure of the fellowship is normally three years, but this period may be extended (or shortened) if this seems desirable in the case of a successful candidate. The fellowship therefore represents a stage in restoring the balance between observational and theoretical astronomy in England, now overweighted in favour of the latter, and at the same time marks the beginning of a new period of friendly and close collaboration between the two observatories concerned. The fellowship is being financed by the Radcliffe trustees, as an earnest of their interest in the study of astronomy in Oxford, while the nomination to and the emoluments of the fellowship are in the hands of the University.

#### The Harvard Tercentenary Celebrations

ELSEWHERE in this issue (p. 667) we print an account of the impressive functions by which the tercentenary of the foundation of Harvard University