the fine achievement that began in that rough road. Taken as a whole, these essays are written with a masterly grasp of the subjects treated, and with a vigour of expression worthy of what is, after all, a youthful institution, notwithstanding its sesquicentennial status. The general conception that every course in a university can embody the humanistic spirit is seen in the range of contributors. For the participants include not only spokesmen for the ancient and modern languages and literatures, the fine arts, history and philosophy, but also for social studies, the sciences, mathematics, medicine, commerce, journalism and law. An introductory essay traces the history of humanistic studies in the university; eleven essays discuss the humanities and the humanistic ideals in university education to-day; four present the views of professional men; and a concluding essay envisages the State university of the future as one the entire programme of which is guided by the spirit of the humanities.

Readers of *Nature* will be specially interested in the essays on the sciences, so we turn at once to the chapter entitled "The Biological Sciences: the Sciences in the Humanities". This is indeed a rousing chapter. The writer abandons the long-prevalent distinction between the sciences and the humanities. It is his strong conviction (and he speaks as a professor of zoology) that sciences take high rank *among* the humanities. He denies the current statement that science is concerned with facts, and the humanities with values. Are we not, then, he indignantly asks, to count among the values, understanding of the world in which we live and appreciation of the beauty of growing generalizations concerning protoplasm, electrons and star galaxies? Are we not to recognize among the values the development of the imagination or the freedom of the mind and spirit? We are left with the dilemma that either the natural sciences are among the humanities, or a leading part in the liberation of mind and spirit is left to non-humanistic disciplines.

Turn now to mathematics and the physical sciences. The essayist quotes John Dewey, a philosopher "with a deep insight into mathematics and the process of scientific thinking". In the process of discovery of truth, says Dewey, the mathematician and man of science experience an æsthetic satisfaction which, if more intellectual and austere, is comparable to that experienced by the artist in disclosing beauty in Nature or in the human form. To the same purpose, he continues, Bertrand Russell, both mathematician and philosopher, says that mathematics, rightly viewed, possesses not only truth but also supreme beauty—a beauty cold and austere, like that of sculpture, and capable of a stern perfection which only the greatest art can show. The writer of the essay adds that the historians who have extolled "the glory that was Greece" seemed to be unaware that the Greeks were men of science—"a discovery which thinkers as far apart as Arnold and Huxley announced, perhaps without knowing quite why".

With the remaining essays we must deal more cursorily than they deserve. The professor of sociology holds that the social sciences have a great opportunity of bridging the distance between the exclusive humanities of former times, and the realities of human society trying hard to recapture the elemental balance between the individual and the group. The essay on history directs attention to the fact that "the pure sciences are increasingly busied with their own histories, which can but mean an accentuation of those elements of human sacrifice, devotion, and genius upon which the sciences have fed and flourished". The first of two noble chapters on literature collects an array of literary evidence to show that among animals man is unique in organising the mass murder of his own species, and the second (one of the best in the whole series) bids the student to go straight to the great books, the truly scientific method, and not to approach them by the falsely scientific method of footnotes, compendia, influences, types and movements.

As one lays down this "survey of the humanities" one understands why the university at Chapel Hill stands high in American reputation, and one realizes that the spirit which animates the survey is needed in Britain too, where, for example, the possessor of a university degree is often too narrowly equipped to be regarded as a well-educated man.

T. RAYMONT

[1] Beard, C., and Beard, M., "The Making of American Civilisation", p. 267.

THE CAVENDISH LABORATORY

The Cavendjsh Laboratory

By Dr. Alexander Wood. Pp. 59 + 8 plates. (Cambridge: At the University Press, 1946.) 2*s.* 6*d.* net.

TO attempt to write the history of any virile institution, covering three-quarters of a century, in some 13,000 words is to accept very grave limitations in respect of mode of presentation and depth of treatment: when the institution in question happens to be the Cavendish Laboratory there is the added difficulty that the whole subject is one with which the general reader is sadly unfamiliar. For it must be supposed that the slim volume under review is addressed to the general reader. Yet the intelligent non-specialist will derive some solid benefit from pondering Dr. Wood's pleasant but essentially sober account. He may not sense the rare atmosphere of the place, which has been the inspiration of so much that has been important for the advancement of knowledge over the last fifty years, nor catch the excitement of discovery which so often has flared to fever-heat within the once drab walls; but he will have a record of development from which certain facts emerge which repay consideration.

He will find how much this institution, of world-wide repute, owes to the generosity of private benefactors—the seventh Duke of Devonshire, Lord Rayleigh (third Baron), Dr. Ludwig Mond (through the Royal Society) and Lord Austin, to mention only those commemorated by name in its buildings. He will be able to follow the growth in numbers of undergraduate and research students, and to appreciate something of the general increase in scale of research equipment during the last quarter of a century. He will realize then the change that has come over the duties of the Cavendish professor since Maxwell was appointed in 1871 "to teach and illustrate the laws of Heat, Electricity and Magnetism; to apply himself to the advancement of knowledge of such subjects; and to promote their study in the University". When he has appreciated this he may cease to wonder that, though Maxwell was appointed to the chair at the age of thirty-nine, Rayleigh at thirty-seven and Thomson at twenty-eight, their successors have been men of more mature years.

N. FEATHER