years the mortality from this disease has been reduced to nearly one-fifth the former rate.

The most stupendous task to which the medical profession has ever put its hands is the crusade against tuberculosis, the preeminence of which as the leading cause of death in all communities is already threatened. Sufficient knowledge of the causation and mode of spread of this disease has been gained within the last quarter of a century to bring within the possible bounds of realisation the hopes of even the most enthusiastic, but it will require a long time, much patience, and a combination of all the forces of society, medical, legislative, educational, philanthropic, sociological, to attain this goal.

But great and rapid as the progress has been, it is small in comparison with what remains to be done. The new fields which have been opened have been explored only in relatively small part. There still remain important infectious diseases the secrets of which have not been unlocked. Even with some the causative agents of which are known, notably pneumonia and other acute respiratory affections and epidemic meningitis, very little has yet been achieved by way of prevention. The domain of artificial immunity and of the treatment of infections by specific sera and vaccines, so auspiciously opened by Pasteur and by Behring, is still full of difficult problems the solution of which may be of immense service in the warfare against disease. Of the cause of cancer and other malignant tumours nothing is known, although many workers with considerable resources at their disposal are engaged in its study. With the change in the incidence of disease, due at least in large part to the repression of the infections of early life, increased importance attaches to the study of the circulatory, renal, and nervous diseases of later life, of the underlying causes of which we are very imperfectly informed. There are and will arise medical problems enough of supreme importance to inspire workers for generations to come and to make demands upon all available resources.

In full recognition of the dependence of success in the warfare with disease upon increase of knowledge, the Rockefeller Institute for Medical Research was founded by the enlightened munificence of Mr. John D. Rockefeller, to whom grateful acknowledgment is made. Likewise to the broad sympathies and active interest of his son, Mr. John D. Rockefeller, jun., the origin and development of this institute are largely indebted.

May the hopes of the founder and of those who have planned this institute be abundantly fulfilled! May it contribute largely to the advancement of knowledge, and may the streams of knowledge which flow from it be "for the healing of the nations."

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

A RECENT report of President Butler, of Columbia University, refers to the salaries paid to the professors and adjunct professors of the University. This part of the report was reprinted in *Science* for November 23. President Butler says that these salaries are inadequate, and that the effects of this inadequacy are deplorable. The report shows that the present average salary paid to a Columbia University professor is but one-half of the sum fixed as necessary thirty years ago, and that the cost of living has meanwhile increased between 10 per cent. and 20 per cent. The purchasing power of the average salary of 1906 is, therefore, hardly more than 40 per cent. of the purchasing power of the salary established in 1876. In other words, the great expansion of the University, which has been brought about by the labours of the university teachers, has also been brought about at their expense. In President Butler's judgment the most important need of Columbia University at the present time is an addition to the endowment fund sufficient to enable the establishment and maintenance of a proper standard of compensation to members of the teaching staff. There are 119 professors and thirty-nine adjunct professors, 158 in all. To increase the salary of each by only 200*l*. on an average—not at all an adequate amount—would absorb the interest at 5 per cent. on a capital sum of more than 600,000*l*. The need is so imperative and the public interests affected by it are so important, the report states, that the mere statement of it ought to bring the needed sum, great though it is, from the American men and women who are the large-minded possessors of wealth.

THE scheme for the establishment at Bristol of a university for the west of England is now taking definite shape. The sum of 40,000*l*. has already been promised, and with the buildings of University College, which are worth about another 50,000*l*., the scheme may be said to have made a good start. There was a difficulty in arriving at an arrangement between the Merchant Venturers' work in higher education and that of University College, but we understand that the Merchant Venturers have practically accepted the principle of the proposed university, and though details remain to be settled, there is good reason to believe that the movement will now go forward with every promise of success. Speaking at the Merchant Venturers' Technical College, Bristol, on December 20, Prof. M. E. Sadler referred to the energy with which the Merchant Venturers had furthered the work of technical instruction, and expressed the hope that it would be found possible to unite the Technical College with the University College, and thus to form the nucleus of a great University of Bristol. Under modern conditions universities should combine opportunities for advanced technological, commercial, and professional training with the highest tradition of literary and philosophical culture. There is still room, in spite of other recent foundations, for a new university in England with its seat at Bristol; but the nation will not gain by the establishment of a university weak because ill-endowed and insufficiently equipped with teachers, laboratories, libraries, and the buildings indispensable to the social side of university life. The rapid growth of Bristol in recent years encourages the hope that its citizens will emulate the example of Manchester, Liverpool, Birmingham, Leeds, and Sheffield in the building up of a great modern university.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, November 8.—"On the Occurrence of Encystation in *Trypanosoma grayi*, Novy, with Remarks on the Method of Infection in Trypanosomes Generally." By Prof. E. A. **Minchin**. Communicated by Prof. Ray Lankester.

In a former communication to NATURE (November 15, p. 56) an account was given of the results obtained by the Sleeping Sickness Commission at Entebbe, Uganda, with regard to the transmission of the *Trypanosoma gambiense* of sleeping sickness, and other trypanosomes, by *Glossina palpalis*, the dusky tsetse-fly.[1] It was shown (1) that the infection was a "direct mechanical" transmission by the proboscis, and that no "cyclical" infection, comparable to that of malaria, could be discovered; (2) that *T. gambiense* appeared to die out in the intestine of the fly after ninety-six hours; (3) that besides *T. gambiense*, the fly carried two other species of trypanosomes, named *T. grayi* and *T. tullochii* respectively.

Since the article referred to was written, it has been found that *T. grayi* becomes encysted in the hind-gut of the fly, and all analogies with other Protozoa suggest that the cysts are destined to be cast out and infect fresh hosts, probably, in this case, the vertebrate hosts from which the fly obtains the trypanosomes. This suggests the occurrence of a hitherto unsuspected mode of infection by trypanosomes, in which the parasites, when taken up from the blood of the vertebrate by the blood-sucking invertebrate, pass, in the gut of the latter, through a developmental cycle, which ends in the parasites becoming encysted. In this condition they are cast out and re-infect the vertebrate host by contaminating its food or drink. Such a mode of infection is termed "contaminative," as contrasted with the "inoculative" method seen in malaria, and hitherto vainly sought for in these trypanosomes.

[1] Mr. E. E. Austen, of the Natural History Museum, has suggested to the author that *Glossina palpalis* should be distinguished in this way from the other seven known species of tsetse-flies.