area. This rather than the original meaning of the term seems destined to persist.

The work of Wernicke is likewise intended for elementary students, and was evidently prepared for home use especially, since it is printed in German type. It is far too detailed a work, as may be inferred from the title page, not all of which is quoted above, to meet with favor, except in reference libraries on this side of the Atlantic. The authors leave little room for play of the student's imagination and less room for the development of his originality. Everything is explained in extenso, and often in a provokingly complicated or inelegant fashion. The beautifully drawn diagrams convey too much information; and the many numerical examples seem well calculated to obscure rather than to illustrate salient principles. The work is one of the happily passing texts that try to present mechanics with little or no use of the calculus, and thus waste a deal of the student's time. There is much useful information in the volumes, however, and they may prove handy for those who cannot bring an adequate preparation to the subject.

The first volume is devoted to mechanics proper and gives an elementary view of the principles applicable to rigid bodies, with many applications to machinery. The second volume treats of gases and liquids, with applications to pumps, injectors, water motors, ventilators, etc. The second volume is supplied with a good index, but the first volume has none. R. S. W.

Water Filtration Works. By JAMES H. FUERTES, M. Am. Soc. C. E. New York, John Wiley & Sons; London, Chapman & Hall, limited. Cloth, 5 × 8 in. 19 plates and 45 figures in the text. 1901. Price, $2.50.

In this work the author has discussed in a clear and very readable form the theory and practice of water filtration as it stands to-day. As preliminary to the subject proper the author devotes a short chapter to a brief statement of the relation of typhoid fever to polluted water supplies, and discusses the various processes of natural purification and the means of protecting surface waters from pollution. The great value of filtration as a means of purification is also here set forth. Chapter II. deals with intakes and sedimentation basins. The former subject is treated very briefly and mainly with reference to questions pertaining to quality; the latter subject is treated quite fully, as is quite proper in a work on filtration, since clarification by sedimentation is very frequently an important part of the purification process.

Following these two chapters is a full discussion of the subjects of slow sand-filtration and rapid or mechanical filtration, in each case the underlying theory being first set forth and then matters pertaining to the design, construction and operation of works. In Chapter VII. are given the author's conclusions as to the relative advantages of the two systems, together with suggestions as to possible combinations. A few pages are also devoted to a very brief consideration of minor processes of filtration. It was doubtless proper to omit any consideration of household filters, but in a special work of this kind it would seem that a fuller treatment of the use of filters in the removal of color and of iron in solution might have been desirable. A brief chapter on filtered-water reservoirs completes the volume.

A noteworthy feature of the work is the full and valuable data relating to the operation of filter plants and settling basins. The designing engineer will also find convenient the numerous conversion tables and diagrams contained therein. The book is well illustrated by half tones showing interesting phases of construction and operation, and by well-executed cuts of details, particularly of filter-regulating devices. As a whole, the work places before the engineer a good summary of the latest information on this important subject, and at the same time presents the matter in a way to be of interest to the general reader.

F. E. TURNEAURE.

DISCUSSION AND CORRESPONDENCE.

IS IT NOT TIME THAT THE TITLE 'PROFESSOR OF AGRICULTURE' SHOULD GO OUT OF USE?

IN most of our State institutions, known generally as Agricultural and Mechanical Colleges or Land Grant Colleges, we have what is known as the Agricultural Department, together with other Departments of the College, as, for example, the Mechanical, Civil and Electrical Engineering Departments, the Chemical, Bio-

logical Departments, etc. In some states where these institutions have merged into or connected themselves with State Universities, many more departments are present. The institutions there have a larger significance, and instead of terming the various lines of work as departments, they are designated as Colleges. Cornell University, for example, is made up of the Colleges of Agriculture, Law, Medicine, Engineering, etc. Each college goes to make up the university and each department goes to make up a college.

There seems to have been a tendency in the evolution of the Colleges of Law, Medicine, Engineering, etc., to recognize the fact that to have just one chair, designated as that of law, medicine or engineering, was to all purposes of reasoning ambiguous. The titles of professor of law, professor of medicine or professor of engineering therefore are not commonly used. In most cases the title designates explicitly the particular department, as, in law, professor of equity jurisprudence and law of real property, professor of commercial law, etc., in medicine, professor of clinical medicine, professor of dermatology, etc., in engineering, professor of mechanical, electrical, civil, marine, mining, etc., engineering.

The School or College of Agriculture seems to be alone in not having abandoned a custom long since recognized by others as obsolete. The title of 'professor of agriculture' is not explicit enough. Where in years past one man taught everything of economic importance in regard to plants and animals, to-day there are a number of well-defined departments. Instead of the professor of agriculture, we have the professor of agronomy, soil physics, animal industry, horticulture, forestry, etc.

In the modern institution, as in the University of Illinois, we find no professor of agriculture and it is readily seen that there is little need for such. It is believed that, in the future, when the fact of its misapplication is thouroughly understood, this custom, now so common, will go out of use.

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The Washington Memorial Institution and a National University.

The article by the Hon. John W. Hoyt, chairman of the National University Committee, published in the issue of Science for last week, may properly be the subject of a few words of comment from one who would welcome the establishment of a University of the United States and who at the same time regards the Washington Memorial Institution as the most important movement in this direction that is feasible at the present time. I am the more inclined to make these comments because Dr. Hoyt quotes from an article written by me four or five years ago without, as it seems to me, giving its full intention. I am quoted, for example, as remarking that 'all the arguments which have been urged against the establishment of a national university turn out to be in its favor.' The passage from which these words are taken reads as follows:

> From a theoretical point of view it would seem that all the arguments which have been urged against the establishment of a national university turn out to be in its favor. The cost, the incompetence of government and the claim that existing universities suffice are, however, practical difficulties which we do not underestimate. Indeed, these are so evident that we should regard it as useless to advocate the immediate establishment of a great national university. We rather hope for a gradual growth from the national institutions already existing at Washington. We have there great libraries, museums and laboratories, able investigators engaged in advancing pure and applied science, and younger men learning from them the methods of research. These are the essentials of a university.

The establishment of the Washington Memorial Institution seems to be a most happy compromise between those who oppose and those who advocate the immediate establishment of a national university. Dr. Hoyt in criticising this institution probably does not represent the majority of the committee of which he is chairman. President Harper was chairman of the committee of the National Council of Education which endorsed the institution, and he doubtless regards it as the beginning of a national university. Other members of the committee may wish to confine the functions of the institution to those at present outlined, but time and the course of events will, in my opinion, prove irresistible forces. The best and