engineering; its technical literature is growing; the quality of instruction and the physical facilities of the schools are improving; and a younger generation of teachers is putting it across."

After recounting the advances being made by engineering schools in the teaching of physics, English, aeronautics, surveying, geodesy, mathematics, hydraulics and fluid mechanics attention is called to the subject of research. The report states that "prior to 1933 over half of new process and new product development came from Central Europe; in 1938, less than five per cent. Totalitarian influence on education is forcing American industry to a new dependence on research carried out in the United States."

The committee on aims and scope of engineering curricula in its contribution to the report presents the new conditions, trends and attitudes which necessitate a new study of the subject; it specifies objectives and stresses the fact that the normal basic course should prepare engineers for a wide range of technical, administrative and executive responsibilities. Some of the views it has considered include (a) the lengthening of the undergraduate curriculum to five or six years, (b) requirement of a period of preliminary study in a school of liberal arts preceding admission to the school of engineering, and (c) the trend in the direction of dividing the curriculum in the junior and senior stages.

The past year brought to completion the second stage in the accrediting program of the Committee on Engineering Schools of the Engineers' Council for Professional Development, of which the Society for the Promotion of Engineering Education is a member body. The first stage had to do with organizing the program of inspection and with developing principles and procedures. The second stage involved carrying these plans into operation. Consequently, there is available to-day an essentially complete list of accredited curricula of the engineering schools of the country for the guidance and use of state licensing boards for engineers, the national engineering societies and the thousands of high-school students contemplating an engineering career. A by-product of the investigations incident to accrediting is the interchange of information which has given opportunity for all schools, large as well as small, to improve their educational programs.

GRADUATE WORK IN CHEMISTRY AT COLUMBIA UNIVERSITY

THE adoption of a new program of studies leading to the degree of doctor of philosophy in chemistry at Columbia University has been announced by Professor Harold C. Urey, head of the department of chemistry.

Under the new system students need not enrol in a definite number of formal courses, although they are expected to register in certain classes in order to prepare for their dissertation and examinations. Hitherto candidates for the Ph.D. have followed a prescribed curriculum in much the same manner as undergraduates. Provision has also been made for greater financial assistance to those undertaking graduate work in chemistry.

The new program has been made possible through arrangements put into effect last year for exercising a greater selectivity in admitting graduate students and limiting the number matriculated for a Ph.D. degree. Students who wish to matriculate for the degree are advised that full-time rather than part-time work is desirable under the new plan. The following regulations have been made:

> In order to become candidates for the degree, students are now required to pass a matriculation examination after one full year of graduate work. Their acceptance will be based largely on the result of the examination and not upon any accumulation of undergraduate and graduate credits.
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> Candidates will also be required to have a good reading knowledge of both French and German. Within one year after being accepted they must submit to the faculty three theses, each containing an original conclusion drawn from reading and laboratory work. These theses must be defended before an examining board comprised of faculty members in the department.
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> The final awarding of the degree will depend upon an exhaustive dissertation prepared by the student on some original research project. The dissertation must be submitted for approval to a committee composed of members of the faculty of pure science. Although a limit has not been imposed upon the length of time necessary to carry out the research, the fact that the great majority of those accepted in the future will be students who will devote full time to their studies will automatically reduce the average time required to obtain a Ph.D. degree.

In describing the plan Dr. Urey said:

> Plans have been made to increase the amount of assistance given by the department to properly qualified students who are unable to continue graduate work without financial aid. Formerly students who were awarded teaching assistantships paying $1,000 for the academic year were required to teach twenty-four hours a week. Under the new plan this has been reduced to sixteen hours. As a result of lowering the number of teaching hours required, there has been a decided improvement in the caliber of those applying for assistantships. It was found possible to accept only a fraction of the number of excellent students who requested such aid this year.
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> In building an outstanding graduate department it is as necessary to have a strong student body as it is to have an adequate faculty. However, despite the presence of the latter, the department can not attract competent graduate students unless a proper amount of financial support is offered by the university.