SCIENCE.

FRIDAY, DECEMBER 24, 1886.

COMMENT AND CRITICISM.

IT SEEMS A PITY that wealthy men who bequeath money to colleges cannot trust the authorities to expend the legacy in the way most beneficial to educational interests. Nearly every rich man who leaves any thing to a college seems to deem it essential that he indicate how it shall be expended, and the channels of expenditure selected are by no means always well chosen. While Mr. Greenleaf, the Boston hermit, who recently left nearly the whole of his large estate to Harvard college, made conditions that are more rational than usual, yet it is probably true that the president and fellows of Harvard could have used the five hundred thousand dollars — if it prove to be so much — with more benefit to education and in satisfaction of what are the more pressing wants of the college, had they been untrammelled by any testamentary conditions. The foundation of new chairs, the increase of the salaries of poorly paid instructors, the construction of some new laboratory, — all suggest themselves as being what Harvard probably needs most. The foundation by Mr. Greenleaf of ten undergraduate scholarships of an annual value of three hundred dollars each, is an excellent thing; and they will, beyond a question, be the means of affording a liberal education to young men who could not otherwise secure it. It may be that Mr. Greenleaf has left his money with fewer conditions than are now reported, but in our view it would have been better had he left his money without any conditions at all. The president, faculty, and trustees of a college are the proper persons to decide most intelligently what the institution needs most.

IT VERY FREQUENTLY occurs that among the advertisements in English educational and literary papers are to be found some calling for applications for vacant chairs in leading educational institutions. Owens college, Manchester, and the leading colonial universities, frequently advertise in this way. As with us this never happens, the practice of advertising being restricted to schools and small colleges, it seems odd to read these advertisements. We cannot help imagining the result that would ensue were it extensively advertised that applications were wanted for the chair of history at Harvard, of physics at Columbia, or of Latin at Yale. Without any advertisement, a vacancy in the faculty of a leading American college not long ago, called forth forty applications from this country and from England, many of them coming from men of eminence in the scholastic world. In selecting a professor from that number, the trustees were driven nearly crazy, and no one can predict the result had applications been solicited by advertisement. Which method is the better for the institution is the important question, and we have no hesitancy in saying that we believe nothing is lost by our habit of not advertising. In the case of all our principal colleges, it is undoubtedly the fact that the president and trustees keep their eyes continually open, and when a vacancy occurs they are pretty sure to know who is the best man for the place; or, in any event, they have made up, unconsciously, a short list from which the selection is to be made. It is to be urged, too, in favor of not advertising, that governing bodies thus escape the importunities of individuals in no way fitted for the position to be filled, but who put in an application in the hope of bettering their condition.

THE QUESTION AS TO the necessity or advisability of retaining corporal punishment in schools as a means of discipline is by no means settled. The majority of the authorities undoubtedly favor its abolition, but a strong minority are contending for its retention. At the last meeting of the German-Austrian teachers' union, a vigorous debate took place on this subject, being precipitated by the report of a special committee in favor of retaining corporal punishment as a last resort in cases of malicious wantonness, obstinate defiance, disobedience, falsehood or dishonesty. Dr. Dittes, a lifelong student of pedagogy, opposed the resolutions as embodying a great pedagogic error. He said that if, as claimed, its re-introduction into German schools was necessary, the logical conclusion must be that the German youth and nation rank, from a moral stand-point, below the French,

in whose schools discipline was good, though no corporal punishment was allowed. Dr. Dittes insisted that the school must not be made a house of correction. The voting on the resolutions seems to have been attended with much confusion, as the result is disputed. The final figures given were, for the adoption of the resolutions contained in the committee's report, 181 ; against their adoption, 168. The Austrian papers condemn the teachers for adopting the resolutions ; and the *Neue freie presse* of Vienna went so far as to say that this public confession by Austrian teachers, that they cannot accomplish their high task without the use of the rod, is proof that the main problem to be solved is not how to reform the education of children, but how to reform the training of teachers.

IN NEW YORK CITY, Mayor Grace has followed up his excellent appointments to the school board by a letter addressed to that body on the subject of industrial education in the schools. Mayor Grace is of opinion that now is an exceptionally favorable time for the establishment and equipment of an industrial school for girls, because the normal college is in what may be termed a 'state of congestion ;' hundreds of applicants who have demonstrated their fitness by obtaining the percentage required on examination, being turned away every year owing to lack of accommodation. Mayor Grace's idea is, that an industrial school can now be established in which young women may be taught such special branches as phonography, telegraphy, book-keeping, cooking, sewing, and type-writing. Admission to this school should be from the various grammar-schools throughout the city, and thus the overpressure at the normal college would be relieved. This school could be made to serve as an experiment, and upon its success would probably depend the future introduction of industrial education upon a more extended scale. By way of practical advice, the mayor recommends the board of education to apply to the board of estimate for an appropriation sufficient to start such a school, and promises his own vote and voice in favor of granting such an application if it is made.

THE GERMANS HAVE been forming a modern-language association similar to that in existence here, and of which the fourth annual session is to be held next week. About one hundred and fifty professors and teachers met at Hanover and organized as the Verband der deutschen neuphilologischen lehrschaft. The same conditions seem to prevail abroad as here, for we read in *Modern-language notes* that at the Hanover meeting pretty much the same wailings were heard about the defects of pedagogic methods, the preponderance of the classical element in the schools, and the necessity for organization, as went up from the assembly by which the American modern-language association was formed. But modern-language teachers seem to disagree widely among themselves as to method, as any one can learn by reading discussions on the subject, such as that lately printed in the *Academy*, the excellent journal published by the associated academic principals of the state of New York. If they are to carry on a vigorous attack against the methods of classical instruction, they must themselves present a united front, and come to a definite agreement as to how modern languages can be best and most expeditiously learned. We very frequently hear complaints from university professors that they are greatly crippled in teaching their subjects, because the men who come up to them in junior, senior, and graduate years, although they profess to have studied German and French, cannot use French and German authorities and books of reference. This certainly is wrong, and should not be suffered to continue ; and it is our instructors in modern languages to whom we must look for a change. Our own firm conviction is, that, at the present stage of scientific and literary study, a student entering the junior year of his college or university course should be able to read French and German fluently, and understand them readily when spoken, if he is to gain the fullest benefit from the last two years of his course. And this knowledge will, we believe, be best secured by making the ability to read one of these two languages a condition of admission to the freshman class, and making the study of the other, with the express aim of learning to read it, compulsory during freshman and sophomore years.

AT THE PHILADELPHIA meeting of teachers of preparatory schools, of which we print an account elsewhere, President Magill of Swarthmore college made an acute comment on Professor James's paper on the professional training of teachers. He said that chairs of pedagogy in the colleges would not be of much avail if women, who are generally

excluded from the colleges, are to form as large a proportion of the teachers as heretofore. In 1880 the census showed that 154,375 of our 227,710 teachers were women, and the proportion has not been materially altered since. The problem is, how to train these female teachers, quite as much as how to train their colleagues of the male sex. And the training of female teachers is of especial importance, because they are very generally the teachers of primary schools and kindergartens; and their pupils, being at the most tender and impressionable age, require the most careful attention and training.

Of course, two ways for avoiding the difficulty indicated by President Magill suggest themselves. The first, and the one that he probably had in mind, is the opening of colleges to women on equal terms with men. The other is to provide all female colleges, training and normal schools, with competent instructors in the history, theory, and practice of education. The former method is the more likely to arouse opposition, while the latter requires the greater pecuniary outlay; for, if a professor is attached to a college already, he can just as easily teach women as men. We fancy that President Magill's point is one that has escaped the attention of most of our educational reformers.

THE PRESENT STATUS of the gymnasium and real-schule controversy in Prussia cannot remain long unchanged. The gymnasial students have too many unfair advantages; and because of this, and despite the excellent and practical character of the education given in the realschule, there are to-day in Prussia 257 gymnasia, as against 89 real-schule and 14 higher realschule. The desire to limit the military service of boys holding certificates from these schools to one year, is the single point on which all the controversialists agree. Those who desire to equalize matters, and deprive the gymnasia of their privileges, point, and forcibly too, to the fact that only one-fifth of the pupils from the gymnasia pursue their studies any further, the rest falling back to inferior posts, or going into a business career. Moreover, until the re-organization of 1882, it was necessary that a boy's path in life should be chosen for him at the absurdly youthful age of nine; and now, since the first three years of the curricula in the gymnasium and real-gymnasium have been made identical, this choice is only postponed until the age of twelve, still far too early.

There are two ways of escape from the difficulty: more of the two courses may be made identical, or a new sort of school shall be devised to take their place. Prevalent opinion favors the latter alternative, the idea of an einheitsschule. Some of the teachers in the real-gymnasia have expressed themselves in favor of some such plan as this. The school-life should be unified by providing, that, after a preparatory course of three or four years, a six-years' course shall follow, made up of instruction in German, religion, drawing, arithmetic, geometry, history, geography, and, during the first three years, physiography and either English or French; in the second three years, mathematics, natural science, and a second modern language or Latin, according to circumstances. On completing such a course satisfactorily, the pupil should have the right to the one-year military service. Then, after all this, the plan provides for two parallel courses of three years, — one based on the classics, and one on modern languages and science. After all the absurd things that have been said in Prussia and elsewhere on this subject, it would be somewhat of a surprise to see so excellent a plan as the above adopted as the outcome of it all.

AMONG THE VARIOUS branches of technical instruction that are coming to occupy a very important place in our educational system, instruction in architecture is certain to claim for itself considerable attention. Architecture, affording as it does scope for the exercise of both speculative and practical temperaments, is very attractive to that numerous class of minds which combines imaginative power with constructive ability. Moreover, we must remember that certainly a quarter of a million of buildings are erected in this country every year, and the tendency is to obtain trained architects to design them and superintend their construction. For all of these reasons, information concerning instruction in architecture is of interest and value. There are only four schools of architecture in the United States, none of them long established, and therefore our sources of information concerning methods of instruction are limited. But in a recent number of the *Sanitary news*, Professor Ricker, of the chair of architecture in the University of Illinois, has a paper on architectural education which is very suggestive, because, instead of being a theoretical dissertation, it is a simple account of how he conducts the

work of his own department. Professor Ricker finds that his work naturally subdivides itself into four classes.

The first of these classes comprises the university work proper, consisting of the methods employed and the instruction imparted in the technical classes. The second embraces the general supervision of the courses of instruction in shop practice, arrangement of course of study, problems, etc. The third covers the supervision of the commercial work of the university, comprising superintendence of work and contractors, the making of estimates, drawings, specifications, etc. The fourth is the supervision of the blueprinting laboratory. The course in shop practice offers some points of interest. It is arranged throughout on the Russian system, which Professor Ricker believes to be productive of better results than the Woodward system, which has been adopted in the training-schools of St. Louis and Chicago. At the University of Illinois no attempt is made to compel all the members of a class to do each part of the work in exactly the same time, for Professor Ricker holds that practice and competition will make a man rapid in execution soon enough, the first essential being to teach him how to work in the best manner, no matter how long it takes him. By adopting this system, each student is treated as an individual, and not as a member of a class; and bright and quick pupils are not kept back, nor are the slower ones urged on at the expense of thoroughness. Professor Ricker's equipment consists of benches and sets of tools for twenty-four students, the maximum number that he thinks an instructor can profitably take charge of.

DR. CUNNINGHAM, the successor of the lamented Principal Tulloch at St. Andrews, opened his classes in divinity with an address of great power and lucidity. After a glance at the past and a glowing panegyric upon his predecessor, Dr. Cunningham took up the subject of his chair and expounded with unusual clearness his conception of it. He said that at the outset he must answer the question, 'Is theology a science?' If it is a science, then it should be welcomed within every university, and taught with the care bestowed upon the other sciences; but if not, if it is a mere feeling or belief without any foundation in reason, without any capability of being reduced to logical forms, then it ought to be banished from every university as something alien to their spirit and design. Dr. Cunningham then proceeded to vindicate for theology the rank and title of a science. While it was largely dependent on metaphysics, on psychology, on moral philosophy, and on anthropology, yet it had facts of its own, gathered from both the material and mental worlds; which facts can be gathered into a system, and reasoned upon in a scientific way. This being true, it follows as a corollary, the speaker continued, that theology should be treated as a science, studied as a science, and taught as a science, freely and fully; not as a system of foregone conclusions, but as a subject capable of advancement, and therefore to be looked into, speculated upon, and brought into harmony with the widening knowledge and highest thinking of the age. If the chemist, astronomer, or physiologist were bound to teach his science according to the beliefs of the chemists, astronomers, or physiologists of a century, or two centuries, or ten centuries ago, his teaching would be a laughing-stock, and his chair driven from the university as unworthy of it. Similarly the professor of theology must be allowed free scope, and not tied down to theology as it was taught two hundred and fifty years ago. Dr. Cunningham's address was on a high plane, and, if it is a fair measure of the character of his university teaching, the latter cannot fail to be successful.

LONGEVITY OF PRESIDENTS OF THE UNITED STATES.

OF the men who have retired from the office of President of the United States, only one now lives. During the last year of Grant's administration, none at all were living; and hardly at any time within the memory of the younger generation have more than two or three lived at the same time. The inquiry naturally suggests itself, whether the men who have filled this office have really less viability than other men of their class, and especially whether a comparison with the tables of mortality justifies the conclusion that in recent years the mortality among them has been remarkable.

To furnish data for investigating this question, I have prepared the following table, showing the years of birth, accession, and death, of all the Presidents. The column following the year of death shows the age at which each President assumed his office. It is formed by subtracting