SCIENCE

FRIDAY, JUNE 22, 1888.

A WRITER TO the Contributors' Club of the July *Atlantic* rightly says that much time and thought are spent in selecting a name for a play or novel, for it is known that success is largely dependent on it, but that parents are strangely careless and unscientific in giving names to children. In the Harvard and Yale catalogues of last year the contributor finds but two or three combinations really good in his opinion. Usually, when a new-comer arrives, some old family name is taken; or, if the parents exercise an original choice, they are too much excited to be guided by any sound euphonic principles. They forget that not only from the social point of view it is very advantageous to have one's name remembered, but that from the business point of view notoriety is capital, and must be obtained by persistent and ingenious advertising. But if a certain amount of notoriety could be obtained for John Smith by an expenditure of time, money, and ingenuity represented by x, and spread over a period of three years, the *Atlantic* writer thinks it safe to say that the same amount could be obtained for Hans Arrowsmith by $\frac{x}{4}$ in eighteen months. Nor does he think the saving of time and money on the part of the knocker at the gate of notoriety the only thing to be considered. The economy of the public stock of energy wasted in innumerable unconscious efforts to remember a name without any corners for the memory to grasp, but persistently thrust before it, would result in an increase of available mental force applicable to settling the question of future probation, or to raising the ethical standard, or to reforming the tariff, or to disposing of the surplus. The importance of the subject leads to the suggestion of one or two of what we believe to be the chief fundamental principles of the science of naming children. The system is simple, and any provident parent can easily master and apply it. 1. Avoid odd, or eccentric, or poetic combinations, and be guided by euphonic quality only. It is true that an odd name may be remembered, but the associations with it will not be pleasing. The idea of oddity or affectation may attach to the shadowy personality built up in the mind of the public. Under this rule, hyphenated names, especially hyphenated Christian names, like Floyd-Jones Robinson, are to be avoided. Writing the first given name with an initial and the second in full is also evidently opposed to correct scientific principles. 2. The best form of a name is a dactyl and a spondee, like 'Jeremy Taylor.' Every one has heard of the 'Shakspeare of divines,' and has a dim idea of an agreeable personality attached to the name. Had his name been Charles Taylor, it is far within bounds to say that his reputation would be about one-third of what it is now. 3. If the surname is not one that can be treated according to the above rule, it should be fitted with a given name, such as to bring the combination as nearly as possible to the above length and cadence, as, Sidney Dobell, Ellery Vane, Henry Ward Beecher, Dante Rossetti, Theodore Watts, and the like; or, otherwise, to two long syllables, like Mark Twain or Bret Harte. The subdivisions of this branch of the subject are too numerous to be given, but all rest on principle No. 2. The phonic value of the surname is, under our custom, the controlling element in practically applying the science of names. The great value of names beginning with 'Mac' or 'O' is evident, because they so readily combine with the ordinary Christian names. A boy pervades the *Atlantic* writer's quiet neighborhood simply because his name is Johnny MacWhorter. He is not in any respect a remarkable boy, but his name forces him into prominence by its phonic value. There are some ten or twelve boys who are comrades, but he and another dactyl-spondee boy, Emory Watson, are the only ones ever spoken of. No doubt there are others who do as much mischief and make more noise, but these two reap all the fame.

THE BILL CREATING a department of agriculture has been recommitted in the Senate, the object of those who voted this disposition of it being to have restored the section, which had been stricken out, transferring the Weather Bureau to the proposed new department. What the final vote upon this question will be is still in doubt, as is also its wisdom. The Weather Bureau has become a necessity to the people of the United States, who will cheerfully pay the million dollars that it annually costs, but who will insist, that, if any change in the service is made, it shall be certain to bring about an improvement, and not a deterioration. The provision of the section in question that gives to all present officers of the Signal Service who shall be transferred to the proposed new department a perpetual tenure of office, at their present pay, making no provision for weeding out the worthless men or advancing the competent ones, is certainly not calculated to make the service any better. It would probably result in the permanent retention of the incompetent, dissipated men in the Weather Bureau; while the bright men, who would be really useful in the bureau, would prefer other positions, where they might be promoted as they deserved.

The observations upon which the Weather Bureau bases its calculations are now all made by enlisted men of the army, who have been specially instructed and trained for the work. No political influence whatever has been allowed to operate for their appointment, promotion, or retention in the service. It has been the aim of the chief of the Signal Office to send to all important stations men who will be acceptable to the communities in which they are to live and do their work, but no member of Congress has been able to secure the transfer or removal of an observer sergeant in order that some favorite might be put in his place. The security which the observer sergeants have felt for the terms of their enlistment has certainly had a beneficial effect upon the character of the service they have rendered. It may seem an anomaly to the people that a duty that is in no respect of a military character should be done by soldiers rather than by civilians, but the military organization of the Weather Bureau has certainly resulted in keeping political influence from dictating in regard to the *personnel* of a class of men whose appointment and promotion it was very desirable to keep free from this influence.

A straw was in the wind the other day which shows the direction it has already taken in anticipation of the change. Mr. Hatch, member of Congress from Missouri, and chairman of the Committee on Agriculture, recently recommended that a certain private in the Signal Service be made a lieutenant, and the entire Missouri delegation joined in the request. When the matter was referred to General Greely, he replied that the promotion could not be made. In the first place, it would be illegal to appoint the man to be a lieutenant unless he was already a sergeant, and he could not be made a sergeant because he was incompetent for the duties of that office. If the man had been a civil officer, or the bureau had been attached to a civil department, he would probably have secured his promotion. A new plan to transform the Weather Bureau from a

military to a civil one was disclosed in the sundry civil appropriation bill reported in the House last Saturday. It provides for the appointment of a civil force of 111 persons in the office of the Chief Signal Officer, with an aggregate compensation of $114,500 a year, and this force it is proposed to substitute for the present military one of 150 men, and so save an expense of $70,748 a year.

THE EFFICIENCY OF MECHANICAL ENGINEERING SCHOOLS.[1]

WHEN the alumni of a school of engineering meet in annual reunion and conference, it is but natural to select for discussion a subject the serious deliberation of which will, to some extent at least, advance alike the interests of engineering practice and of the technical school itself. The technical graduate, who loves his profession and his alma mater, must deem it a wish of his heart to further in every way the harmony between the training and the practice of the engineer, to raise the efficiency of both the practice and the school to the highest attainable standard.

Happily, it is a fact that each day the value and importance of the technical school are becoming better appreciated, and that at this time none are readier to acknowledge the benefits conferred by systematic training in such schools than the leading engineers, who, without such preparation, have by their individual, unaided efforts, risen to deserved prominence and fame. Such general appreciation is recognized in the spoken and written word of the foremost men in the profession, in the fact that they send their sons and advise young men seeking to become mechanical engineers to attend these schools, and in the marked preference shown in the employment of the technically trained engineers. That these are facts is a cause for congratulation, a testimony to the value of systematic study, and an evidence of at least an average efficiency on the part of the leading schools of mechanical engineering. It is a great advance upon the time, not so long ago, when it was presumed that the main thing — and the first thing — the technical graduate had to do was to unlearn almost every thing he had acquired in the schools.

While we should be duly grateful that the status at the present day is such as we have pictured it, we must not conclude hastily that the technical school is fulfilling its entire mission, or, if I may so term it, attaining an efficiency of one. I am well aware that this would be asking too much; for what device, scheme, or appliance can show up this efficiency? At the same time the technical school should approach this limiting value of the perfect device as nearly as possible, and we should study the sources of loss, so as to reduce the losses to a minimum.

Such is naturally the main object of the serious work of alumni meetings, and the president's address should at least serve as an incentive to direct special thought on the part of the membership to these particulars.

From this point of view, the inquiry has suggested itself to me as worthy of our consideration, has the instruction in schools of mechanical engineering, within the past twelve years, progressed so as to conform to the increasing needs called for by the engineering advances secured within the same time?

In a paper read last month before the American Society of Mechanical Engineers, one of the members, who has practically contributed to the progress of the printing-press, presents 'A Plea for the Printing-Press in Mechanical Engineering Schools.' It is an honest plea, courteously uttered, and with an evident desire in no way to disparage the value of the training secured in engineering schools. The writer maintains, that while the printing-press shares, perhaps, alike with the steam-engine the fame as a great civilizer, no attention is given to it in any specific way in the leading engineering schools; that no books relating to it are studied or referred to, no lectures delivered detailing its mechanism; that its factories are not inspected by the students; and that no sample machines adorn the schools' laboratories of engineering. All this is inferred by the writer from a perusal of the catalogues. Usually, judgment as to the course of studies pursued, if based solely on the catalogues themselves, is a dangerous procedure, apt to lead to fatal errors; but in this case no mistake is made, for it is a fact that the printing-press receives but little if any attention in the engineering schools.

Had our friend, the writer, been interested to draw the picture of neglect of subjects discussed still further, he would have soon discovered that small attention, if any, is paid in the course pursued in engineering schools to type setting and distributing machines, paper-making machinery, envelope-machines, sewing and stitching machines, which are allied closely with the printing-press as civilizing agents. And if he looked over the many practical industrial engineering fields, he would have had to come to the conclusion, that, as a whole, but little if any attention is paid to hat-making, cloth-finishing, brick-making, and agricultural machinery, and the like, and that even the looms of various nature come in for the most cursory attention.

Had this been done, the amount of neglect discovered would have been so appalling that he would logically have been forced to one of two conclusions, — either that his point of view and solution were not the proper ones; or that mechanical engineering schools are essentially a failure, and not in one whit entitled to the credit which he really liberally bestows, when having but the one practical omission in mind, and not the many others, no less important ones, only a few of which we have enumerated.

Had the latter conclusion, condemning the schools as a failure, been reached, it would, in my judgment, have been a totally erroneous one.

Still the fact remains that within the past twelve years (and I only name this period because it is the term in which, since graduating from Stevens, I have followed more closely and played my humble part in the current of events) the progress made in most of the individual engineering and mechanical pursuits has been tremendous, while entirely new industries have called for new engineering appliances, and, *vice versa*, new inventions have developed new industries.

What should be the relation of the course of study pursued in the schools of mechanical engineering to these ever-increasing important industrial engineering applications?

Should every new, important mechanical device, especially if it brings with it new fields of practical employment and labor for the engineer, immediately find its place as a study in the engineering school?

If this be so, the school of mechanical engineering will have to extend its term of study to an indefinite extent; and ere long it will come to pass that the young student, entering as a beardless youth, will graduate from the school as a gray-haired man in the decline of life: for, surely, if every important machine is to be the subject of special study in the technical school, a lifetime will only suffice to cover the ground. And the result?

The result would be that the engineering schools would be of no use to the world; for the world's engineering work would be being done by outsiders, while the gray-haired students, plodding along, would be kept busy studying this very work, and not be active agents in its development.

I have purposely drawn this picture from an extreme point of view, for such method often enables us to discover what the fundamental truth underlying the problem really is. I think, in this case, the truth is apparent at once.

It is the mission of the technical school to inculcate the principles of engineering, to train and mature the powers of observation and mechanical judgment, and, after teaching the laws of physics and mechanics, to give the ability to apply these laws to problems arising in machinery and the industrial arts. The special machines and appliances dwelt upon in the school should serve this one purpose: a knowledge of them should not be the end, but the means. Because we can best inculcate and supplement a correct understanding of the physical laws, and a knowledge of how to apply them to the design of machinery, by studying the successful applications made, therefore such study should form an important factor in the course of the technical school.

These engines, motors, machines, factories, and engineering works should serve as the constant tests and checks of the student's efforts at individual design. When the student has once acquired the ability to put physical principles and experimental data

[1] Presidential address delivered by Alfred R. Wolff, M.E., before the Alumni Association of the Stevens Institute of Technology, June 13, 1888.