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THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The thirty-fifth meeting of the American Association for the Advancement of Science will be held at Buffalo, New York, from Wednesday morning, August 18, until Tuesday evening, August 24. This is the third time that the Association has accepted an invitation to hold a meeting in Buffalo, the previous occasions having been at intervals of ten years. The city offers such excellent facilities for a gathering of this kind, both in its spacious auditoriums and hotels and in its general accessibility from either the East or the West, that it has grown to be a favorite locality with the members, and a large assemblage has been assured. Special attention will be given by the section on geology and geography to the problems connected with Niagara Falls and its gorge. The retiring President, Prof. H. A. Newton, of New Haven, will deliver his address on the first evening of the meeting. The President-elect is Prof. E. S. Morse, of Salem, Mass.

TRANSMISSION OF POWER BY ELECTRICITY.

The carefully conducted experiments of M. Marcel Deprez, on the transmission of electricity over long distances, have finally resulted in success. After many trials and difficulties, the conductors established between Creil and La Chapelle Station, Paris, begin to work satisfactorily.

The power transmitted, and rendered available at the receiving station, was found by measure to be 50 horse power, an efficiency of 47 per cent. As the distance between Creil and Paris is almost 32 miles, this result is not unsatisfactory. The line consists of a copper cable, the total cross section of which is equal to that of a solid wire having a diameter of three-twentieths of an inch. The cable is aerial, and supported on porcelain insulators. When near frequented spots, it is incased in insulating material, but at other places it is exposed.

The success of these experiments suggests the advantageous introduction of the practice into this country. In many localities, and particularly where water power is available, it would be possible to produce electricity under such favorable economic conditions that a loss of even fifty per cent in its transmission would still make the arrangement a profitable one when compared with the direct generation of electricity on the spot where it is needed.

It frequently happens, too, that power is available in one place at certain periods of the day, and, from the nature of its origin, must be wasted unless transmitted to a distance. Its conversion into electric energy and subsequent transmission would then represent a saving in the course of the year of no inconsiderable magnitude. Water power has been utilized in several localities in the United States and Canada for the generation of a current to be used in the electric illumination of towns and works located at a distance of perhaps two or three miles; but the limit has not nearly been reached, and even within these shorter ranges there have been as yet but few attempts to utilize the power at hand. There is room here for considerable ingenuity in securing the services of an agent which is at once convenient and economical.

THE CHARACTER OF THE NEW CRUISERS.

It has been said that the best thing after knowing a thing is to know where to find it; and in selecting designs for the cruisers provided for by the act of March, 1885, the Naval Board has, apparently, acted on the suggestion. It could scarcely have been expected that the Board would originate a new system of marine architecture or otherwise revolutionize naval warfare. The most that could reasonably be hoped for was that it would intelligently examine the best models of the Old World naval constructors, who have had large and varied experience of recent years, while we have been standing still, and discover which were best suited to the purpose Congress had in view. Among the cruisers built by Sir William Armstrong for the Japanese, Chile, and Chilean governments are to be found by far the most successful models of unarmored and partly armored fighting ships afloat. They have speed, strength, and stiffness, work quickly, and are good sea boats. The Chilean cruiser Esmeralda, of which a picture and description were recently given in these pages, may safely be said to be the best of her class now afloat. She has made 18 1/4 knots speed on the measured mile; and while she can readily run away from such ponderous and slovenly monsters as the Devastation, Invincible, Imperieuse, Dandolo, or Duilio, and attack the merchant fleets they are supposed to protect, she can fight, too, upon occasion, choose her own target and firing-point, and get out of the way when she has got enough. The Japanese cruiser Natchi-Kan is another of this class—a staunch, speedy, fighting cruiser; and the Chinese Tchao-Yong is likened unto her. These are the craft that the Naval Board have wisely it seems, selected as criteria for the new Yankee cruisers, modified in some respects to meet the demands of Congress required. The Board would seem to have left itself a certain amount of latitude as to decks, spars, barbettes towers, and the like, and it remains to be seen whether Yankee ingenuity

retains its pristine promptitude in selecting the best and improving by combination and innovation.

It seems fortunate, now that Congress and the country are in the humor to do something for our long neglected navy, that the naval constructor and expert, on whom we must depend for models, have not shown a disposition to fit us out with floating forts, such as the great powers have been building for many a year—monsters whose lagging prows will not admit of their approach to hostile ships on the high seas near enough to do them injury, and which, when they make the shore, may be made the prey of a torpedo fleet, whose sum total of cost will scarcely make up that of one of their number, as a school of whales is scattered and beaten off by a few resolute though comparatively insignificant thrashers.

Whoever has read the naval history of our civil war must remember the effective work of the swift-running, unarmored corsairs Alabama, Georgia, and Florida—at a time, too, when we had the greatest fighting fleet the world ever saw. Had these Confederate cruisers been slow-going, steel-clad batteries, it is not likely they would have done a tithe of the injury. Their drums would have been beating "to quarters" from sunrise to sunset, and they would assuredly have got more fight than booty.

One of these ships could overhaul a merchantman with celerity, and lie in wait in the tracks of the various trading fleets with the precision of a cat which knows that within a given time a mouse will issue from the crevice near at hand.

Again, the modern marine gun has advanced so much in efficiency that it will pierce the heaviest armor that can be floated, until now, when some of the best authorities believe that heavy armor is a less defense than light armor, because it lets a hostile shot in on one side and will not let it out on the other, as light armor will do, and it is under such conditions that a lucky shot often does its maximum damage.

OUR BOYS.

In glancing over the possible openings for boys, one is forced to admit that unless a lad have genius, perseverance, and a good, physical constitution, he will find the beginning of a professional life almost insurmountably difficult, if he be obliged from the start to depend upon his profession for a living. So large is the competition, even in our own comparatively new country, and still so in England and on the Continent, that the inducements to enter the so-called learned professions are financially very small. The satisfaction of ultimate success, and the intellectual pleasures which such a course makes possible, are regarded by any true student as more than compensations for the early discomforts, and we would never urge considerations of a financial nature against a boy's following his natural bent. That is a fatal policy which advises him to choose his calling simply for the money returns it promises, for he will learn sooner or later that money is but a small factor in true success. But we would very strongly urge such considerations in attempting to dissuade those who have no natural qualifications for a professional life from entering upon so unpromising a career. There are many whose scholarly abilities are too meager to permit the hope of successful competition when pitted against their more gifted brothers. It is certainly unfortunate, if not pitiable, that these young men should, through mistaken notions of what is respectable and what is praiseworthy, rush into a course which can bring them only failure and mortification.

Each year, thousands of young men are graduated from our universities and schools of learning, only a very small proportion of whom are ever heard of afterward in the real contests of life. And it has become a notable fact that an advertisement for a man to fill any but a manual position will bring a number of college graduates out of all proportion to the total applicants. This proves nothing against our schemes of education, for the contrary evidence is too overwhelming. The men of whom as a nation we are most proud, the brightest minds in science, literature, law, medicine, theology, and the fine arts, have been for the most part educated in universities and colleges. But the failure of such a large proportion of college-bred men to attain even ordinary usefulness in the events of life does prove that, for them at least, some element was lacking which should have contributed to their preparation for subsequent duties. Had they been blessed with the three qualifications already enumerated, success would have been possible in almost any direction. But unfortunately very few have genius; a smaller proportion than should, have good health; and of the three, perseverance only appears to be a cultivable quality, and even this is largely limited by physical endurance. A very successful man of affairs, quoted by an English contemporary, *Industries*, when asked for the secret of his success, replied, "I had the physical constitution to begin work at six o'clock in the morning, and keep on till eight, nine, or ten at night, and that for twenty years." One would say that this was well deserved.

It is not a Utopian tenet that teaches the possibility