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THE NOBEL BEQUEST TO SCIENCE.

Look at it from whatever point of view we may, it must be admitted that the present age is pre-eminently the age of science. Whatever the future may have in store, it is certain that the past history of the race cannot show another period in which human life was so completely environed, dominated and impelled by a master influence as it is to-day.

Of all the forces above mentioned, religion—as is natural and right—has left, and will continue to leave, behind the most enduring monuments of its work. But it cannot be said that even this beneficent influence has, in any age, impressed itself upon the life and works of the race in the supreme degree that science is doing in the latter half of this century.

The world has lately witnessed a striking evidence of the tendency to give the claims of science their rightful recognition in the splendid bequest which was made by the great Swedish inventor, Alfred Nobel. In leaving his vast fortune of nine millions of dollars for the promotion of science and the furtherance of civilization, he has not only endowed systematized and individual scientific research, but he has planted in the minds of men a valuable suggestion, which will not fail to bear fruit in the years to come.

The will provides that the income from Mr. Nobel's fortune shall be divided into five equal portions, which are to be distributed as follows: One-fifth to the person having made the most important discovery or invention in the science of physics, one-fifth to the person who has made the most eminent discovery or improvement in chemistry, one-fifth to the one having made the most important discovery with regard to physiology or medicine, one-fifth to the person who has produced the most distinguished idealistic work of literature, and one-fifth to the person who has worked the most or best for advancing the fraternization of all nations and for abolishing or diminishing the standing armies, as well as for the forming or propagation of committees of peace.

Now the measure of stimulus which will be given to scientific investigation and social advancement by the announcement that five prizes, each of \$60,000 to \$80,000 value, are to be bestowed upon successful invention and discovery, depends in the first place upon the realization by the world at large of the bona fide nature of the bequest, and further upon the public conviction that five separate fortunes are actually to be bestowed every year.

The scheme is so novel and the reward so fabulous—being far beyond anything in the way of money value before offered for human competition—that it will possibly receive but a passing thought from the majority of busy workers in the world of science. But if the bequest is upheld in the courts of law and the awards are duly made for the first year's inventions, the immediate effect of Nobel's plan cannot fail to be very far reaching. It will undoubtedly give a powerful impulse to all scientific research and experiment.

In saying this we are well aware that it has been from time immemorial one of the unspoken and unwritten boasts of the votaries of science that their rewards consist in the honor and esteem which their researches win for them—that they work for the pure love of their calling, and gladly forego the more lucrative pursuits of life. As a matter of fact it was this consideration which originally led to men's making a distinction between a profession and a trade—the old idea being that the professional man worked for his profession and the tradesman for pelf. Whatever truth there may once have been in the distinction, it has faded to a very specter of its former self in these latter days.

And yet it must be confessed that if wealth and all that it can bring is due to any one set of men more than another, it is due to the scientists, who give us from time to time those great fundamental truths upon which the industrial achievements of our complex modern civilization depend. Close the laboratory of the man of science and our boasted march of civilization would be brought to a full stop; and yet it is a fact that the great majority of these pioneers who unlock to the world the great truths upon which the industrial and much of the social fabric of our modern life is built up, reap practically nothing of the harvest of wealth for which they have done the sowing.

To such men in particular, and to that class of inventors which has the genius for discovery but no faculty to transmute its ideas into wealth, the bequest

of Nobel will come as a richly merited but too long delayed reward.

TWO HUNDRED MILES ON A BICYCLE IN ONE DAY.*

New York to Philadelphia and back, a distance of two hundred miles, in 21 hours and 54 minutes, does not look so formidable a feat in retrospect as it did when a few days ago the writer lit his lamp and said good-bye to the night clerk of the Astor House, New York, at 1:50 A. M. and took the two o'clock ferry to Jersey City. That the journey was made with comfort and with never at any time sufficient fatigue to spoil the real pleasure of the trip is to be attributed to a good constitution, careful judgment as to speed, which varied from eight miles an hour to twenty, according to the road, and last, and above all, to the perfection of that mechanical marvel of the last decade of this century—the pneumatic bicycle.

Undoubtedly it is the pneumatic tire above everything else that has doubled the distance which can be covered on the bicycle for a given amount of fatigue, and in this respect it holds the same relation to the solid rubber tire that this did to the iron tire of the primitive bone shaker. The writer speaks from experience, and as he wheeled his "safety" aboard the New York ferry at 11:30 the same night, his mind ran back to his first mount of twenty-two years ago—a veritable wood rimmed, iron tired, 70 pound "bone shaker" of the late 70's. And just here, be it said, no subsequent century or double century run has afforded the supreme satisfaction that was felt at the close of the first long run—forty miles—on this cumbersome compound of buggy wheels and bar iron. The next machine, purchased in 1876, had a larger front wheel, forty-two inches in diameter, and the iron tires were replaced by strips of half round rubber, which were tacked to the rims. Then followed the "spider" or "tension" wheel, and the bone shaker gave place to a fifty-two inch roadster, built by the Coventry Machinist Company, England. On this, in 1881, during a fortnight's tour, the writer made a run of one hundred and sixty miles in one day. That was sixteen years ago, and it was as much as anything else to test the relative merits of the "ordinary" and the "safety" types that the present two hundred mile trip was undertaken. The one hundred and sixty mile journey was made on faultless macadam roads and at a time when the writer was probably more vigorous than he is in his fortieth year; and moreover, in the present ride, only eighty-eight of the two hundred miles of road could be called really first class. Altogether, the capacity—if we might use the term—of the pneumatic, as compared with the ordinary bicycle, for touring, is probably about as two to one, and it is the pneumatic tire, and in a lesser degree the higher gear, that have made the difference.

The start from Jersey City was made at 2:20, and the first stretch of the journey to the further side of Newark was about as excruciating a piece of riding, taken as it was in the dark, as can be found in all America. The course leads across the Jersey meadows by way of the "plank road," over which the riding is only a trifle less rough than over the mile of cobble stones by which it is approached, or the three miles of rough Belgian blocks which extend from the plank road through Newark. On the further side of Newark the macadam is reached. It has taken an hour and twenty minutes to jolt this ten miles by lamplight, and the nervous irritation has already taken some of the fine edge off one's condition. But with the macadam road comes the first peep of day, and taking to the side path, the five miles to Elizabeth are reeled off at a swinging gait—but somewhat warily, for it is yet dusk. Another mile of stone paving through Elizabeth and at last, on turning sharp to the right, the swift, easy stroke of our eighty-four gear announces that one is on the truly magnificent twenty-three mile stretch of macadam from Elizabeth to New Brunswick. Here a gait is struck that varies from seventeen to twenty miles an hour, and for the next one and one-half hours the miles are reeled off over an undulating road that runs through the pretty villages of Roselle, Cranford and Westfield and through Plainfield and Metuchen to New Brunswick. This is the very beau ideal of cycling, and at this speed the cool, early morning air goes singing by in a way that makes one think there must be a brisk head wind to contend with. But the smoke wreathing lazily upward from the cottage chimneys shows that the air is perfectly still. At a quarter to six we are crossing the stone bridge over the Raritan River into New Brunswick and bumping over our enemy the stone pavement.

The clay road from New Brunswick to Kingston—15 miles—makes one painfully aware that he has left the macadam behind, and the wheel is turned from road to side path and from side path to road in search of the most eligible track. Much of this road is rocky, especially between Franklin Park and Kingston. Here we are on historic ground, for it was over this very route that Washington made his famous counter-march from Trenton to New Brunswick—a piece of

* Notes of a journey a wheel recently made by one of the editors of the SCIENTIFIC AMERICAN.