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## THE CHARM OF THE BICYCLE.

The philosophers tell us that one of the most powerful motives that govern human life is the love of power; that the exercise of power, showing itself in some visible effect, is accompanied with pleasurable emotion, and that the degree of pleasure depends upon the smallness of the effort compared with the magnitude of the effect. It is claimed that this love of producing effect shows itself at the very threshold of life in the preference of the infant for toys that produce sounds or exhibit motions, and it is probably because the result is so disproportionate to the effort that the boy finds unalloyed delight in the noise of a drum or the screech of a tin horn.

The same philosophy tells us that the politician, the soldier, the leaders in the world of finance, and, indeed, all men who exert a powerful influence upon the destiny of their fellows, are consciously or unconsciously actuated to a large degree by the same passion for producing effect, and producing large effect with the smallest expenditure of effort. Certain it is, that the delight with which we contemplate achieved success is always heightened if that success has been won with a disproportionate effort or loss. The victories of Manila and Santiago, great as they were in themselves, take on a special glory from the fact that in those two conflicts we destroyed a navy and won an empire with practically no hurt to ourselves. Our successful invasion of foreign markets has aroused the national enthusiasm, not merely because it means increased trade and enhanced prosperity, but because the extraordinary ease with which, at the first attempt, we have captured these foreign markets, appeals to our sense of power and testifies to the latent energy of the race.

But coming a little closer to our subject, we find that in the world of sport, and especially among those devotees who are entitled to the designation of true sportsmen, this love of power and the desire to perform exceptional feats of skill and endurance with the least expenditure of visible effort, is the supreme motive. Indeed, we doubt if any surer test of the quality of an amateur sportsman can be found than the degree in which he is actuated by this spirit to the exclusion, or rather the subordination, of all other motives. The ideal sportsman engages in combats of strength and skill, not with a view of capturing some reward in the shape of money, jewelry, or medals, not merely for the pleasure of "downing" his opponent, not alone for the grand stand applause—although all of these are perfectly proper motives in their place and degree. The ideal sportsman is he who aims to break the record first and last for the sake of the sport itself, and who finds his highest reward in the contemplation of the fact that the mark (whatever it may be) has been placed so much higher with so much greater ease (if such be the case) than ever before. The delight of the audience is always greater if the winning horse come in without the incentive of whip and spur, or if the popular sprinter cross the tape watching his beaten opponent over his shoulder, or if the champion cyclist of the year sweeps through the "bunch" from the rear and "sits up," an easy winner, a yard or two before the tape is reached.

Looking at the active sports as a whole, it will be found that their relative popularity is largely determined by the degree of skill, the swiftness of motion accomplished in proportion to the smallness of the effort that must be exerted. Hence the enormous and sudden popularity of certain games over others. Note the sudden extinction of the amiable, but imbecile game of croquet, by the swifter game of lawn tennis, and this, in turn, by golf, with its far-reaching links and its "drives," measured by the hundreds of yards.

It is when we consider the modern pastime of bicycling, however, that we meet with the most striking exhibition of the strength of this desire to do much and do it with comparatively little effort. It is because the bicycle enables us to travel so far afield with such an astonishingly small expenditure of effort that it has achieved its sudden and world-wide popularity. Of course, there are other contributory causes, such as the desire for exercise; the opportunity given to those who cannot afford to keep a carriage to get out into the scenes and sweet air of the country; and to many

people the saving of time and expense in transacting their daily business; but these considerations alone do not account probably for one-tenth of the millions of people who day by day and week by week are to be found reeling off the miles with a persistence which might make one suppose that wheeling was as necessary a part of their existence as breathing or the circulation of the blood—and to not a few of them, indeed, it is as necessary.

Fresh air, green fields, the song of birds, the ever-changing panorama of the countryside, the quickened sensibilities of mind and body all are accessory pleasures of the wheel; but the deep, underlying charm of it all is the sense of achieving this swift motion at as little expenditure of effort as would be necessary in walking for half a dozen blocks in a city thoroughfare. Who will ever forget his first bona fide country ride on a good level road, undertaken as soon as the problems of equilibrium had been mastered, and the thrill of exultation with which he found that the same muscular effort which moved him at three miles an hour on his legs, is now sufficient to carry him at twelve miles an hour on his wheel. The result seems so absurdly disproportioned to the effort, as to create a half belief that one's own physical strength must have redoubled. Certain it is that one's sense of power is most pleasurably affected, and the persistent protest of the mind against the inertia of things material is silenced for the while.

And, after all, speaking of the inertia of things, the bicycle is only one expression of the great world-struggle of mind to overcome the inertia of matter.

The history of the arts and sciences, and especially of those which concern travel and intercommunication, is the history of man's successful effort to set in motion the latent energies, the inert masses of nature, and hence there is a strict relation between the development of transportation and the growth of our material wealth and comfort. The craze for "breaking the record," whether it be on the train, the steamship, or the wheel, is prompted by something more than the mere love of the spectacular; for the world recognizes that every new performance is a further breaking away from that universal stagnation in which all matter lay before its present evolution began—a stagnation which it is the constant effort of our modern arts and sciences to overcome.

## RECORDS OF SPEED AND ENDURANCE ON THE BICYCLE.

Although the great majority of riders are content to travel at a comfortable speed of from 8 to 10 miles an hour, and have neither the inclination nor the ability to ride faster for any length of time, the great crowds that witness the trials of speed and endurance, week by week during the racing season, testify to the fact that the riding public is deeply interested in the possibilities of speed and endurance on the bicycle as shown by the racing cyclist. The racing enthusiast is well versed in the standing of the records for various distances and times, and carries them, indeed, at his fingers' ends; but there are many riders to whom a statement of what has actually been achieved would come with a shock of surprise. We are all aware that some phenomenal speeds have been recorded, but there are probably few who appreciate the fact that a mile has been ridden on the track at the rate of between 39 and 40 miles an hour, or that a rider has covered 34½ miles in a single hour, or that yet another has rolled off 616 miles in a single day, or that—perhaps most wonderful of all—a fourth rider has ridden over 2,100 miles in the space of six days, while a fifth has traveled two hundred and fifty consecutive centuries on as many consecutive days, thus covering 25,000 miles in a little over eight months of the year.

The full meaning of these figures can best be realized by comparison. A mile in 1 minute 31½ seconds, as made by Taylor at Philadelphia, is just under 40 miles an hour, which is as fast as or faster than the scheduled running time, including stops, of many of the crack expresses between New York and Chicago. Compare Elke's feat of riding 34½ miles in an hour at Philadelphia with the speed of the so-called local express trains out of this city. It means that, if a suitable track were laid down to some outlying town 30 or 40 miles from New York, the rider in question could start for home in the evening at the same hour as the train and reach his destination several minutes earlier than he could on the cars. On September 16, 1897, Cordang rode for 24 hours at an average speed of 25.7 miles an hour, covering a total distance of over 616 miles. One extraordinary feature of this performance was the fact that the pace was faster during the twenty-fourth than during the first hour, and that after the rider had covered 600 miles, he was riding the mile in 1 minute and 56 seconds and 1 minute and 57 seconds, or at the rate of 31 miles an hour. Applying these figures to actual railroad traveling, we find that there are even to-day continuous 600 mile journeys which the traveler will take over 24 hours to complete. If a special track could be laid for the purpose, the same speed would carry a rider from New York to Richmond and back in a single day. Perhaps the most wonderful feat of long distance traveling on record is the ride of Miller made during the winter at San Francisco, when he covered over

2,100 miles in six days of continuous riding. This would be equivalent to riding from San Francisco to Chicago, or over two-thirds of the distance across the continent, in a week, and having one day of the seven for rest at the journey's end. Finally, we have the 25,000 mile ride of Edwards, who, starting on the first day of January, 1898, rode a century every day of the year up to the 7th of September, thus covering a total distance greater than the circumference of the globe in only about 30 per cent more actual riding time than that allowed by Jules Verne for a record trip around the world.

The mile record was made on a chainless wheel of the Sager type geared to 114. The hour, the 24-hour, and the 6-day records were made on chain wheels with gears varying from 96 to 112. The 25,000 mile ride was made on a chainless wheel of the bevel gear type, the same wheel being used throughout and in every kind of weather. The fact that the gears, though worn, were in good working order testifies to the durability of this type of driving mechanism.

These are records as they stand to-day. It must be understood, of course, that the mile, hour, and all-day records were made behind pacing machines. The present season is likely to see the introduction of motor pacing, and we may look for an extensive reduction of these records, remarkable as they are.

## OUR SEA-COAST DEFENSES.

A few years ago the country was greatly disturbed over the fact that it had no sea-coast defenses. Now it appears that while we have the defenses, we lack efficiency in the care and handling of the guns. Such, at least, is the burden of a report recently made upon the subject by Captain William Crozier, his complaints being based upon what he saw during a tour of inspection made last November. The matter can best be stated in the Captain's own words:

"I have found in many cases that neither the officers nor men understood or attentively looked after the armament. I have many times had difficulty in getting guns, and especially carriages, properly cleaned for firing test. . . . The officers seem to be without proper standards of performance, and almost no attention was paid to rapidity of fire. . . . When it came to the actual firing of pieces, all efforts at lively work were often abandoned. There has been thus far great neglect of the subject of the pointing of mortars; some batteries which have been completed for years have been during the late war and are now absolutely unserviceable because of inability to point the mortars at a target." The report attributes this lack of interest to the long neglect of the subject during the twenty years following the civil war and to the lack of a liberal policy in the management of artillery matters, particularly in the opportunities for actual practice in loading and firing guns. He suggests, as one important remedy, that there should be on the staff of the commander of the army a chief inspector of artillery, who should make periodical inspections to see that the various orders respecting the details of artillery service are faithfully carried out.

This report will come as a painful surprise, for it shows that we are backward in a service which we thought was being brought up to a state of considerable efficiency. The two defects of slowness of fire and absence of range finders are about as serious as they could well be. Modern warships will try to run by the batteries, and their high speed will carry them through the danger zone very quickly. Vessels that can make a mile in less than three minutes will be a difficult target for guns which (because of slow handling) can fire but one shot in every six minutes. Next to accuracy, rapidity is the great desideratum in a gun detachment.

Mortars sunk in deep pits, with nothing to look at but the blue sky above, are absolutely dependent on distant range finders for locating the enemy, and giving the proper elevation and traverse for the mortar, and a battery of mortars without means for pointing is as useless as a rifle in the hands of a blind man.

It is to be hoped that immediate steps will be taken to reform the abuses which have been so faithfully exposed in this report. It is to the author of this report and to Colonel Buffington, Chief of Ordnance, that we owe much of the excellent material to be found in our defenses, and we trust that under the present regime this important arm of the service will be brought up to the standard, in personnel as well as material, of the best modern practice.

## THE FASTEST CRUISER IN THE WORLD.

It seems ridiculous that the nation that is least able to make use of them should possess the fastest torpedo boat and the fastest cruiser in the world. The famous Schichau firm recently built a torpedo boat for China which made 35.2 knots per hour, and now the Armstrongs have completed a 4,400-ton cruiser, the "Hai Tien," which has made a natural draft speed of 22.6 knots and a forced draft speed of 24.1 knots per hour. This is the record for a warship, or, indeed, for any kind of ship of that size. If the "Hai Tien" could maintain that speed across the Atlantic, she would make the passage in about four days and a half.