## AMPÈRE: HIS LIFE AND WORK.

The above was the subject of Prof. Loudon's lecture last Saturday afternoon. Perhaps the name is best known to most people from the fact that in measuring electric currents the unit is the ampère; but the life of the illustrious Frenchman is full of interesting and touching incidents. He was born in 1775, and, though his contemporaries, Laplace, Cuvier, Carnot, Fourier, Fresnel, Arago, Monge, Poisson and others remind us that there were giants in those days, yet Ampère was as great as any of them. He was just approaching manhood when the Revolution occurred, and Ampère had his share of the misfortunes of the time. From them he sought relief in study; and it was a peculiarity of his genius that he attacked problems of the highest order in almost every branch of science, but we know him best through his discoveries in electrodynamics, of which he has been called the Newton.

Glimpses of the man himself reveal to us a pure and simple character, an ardent spirit, which no toil or privation could crush, and a devout and steadfast soul, whose pure faith shines brightly about him, like an aureole, through all the darkness that long encompassed him.

In 1793 the Revolution was at its height about his native city of Lyons, and 70,000 Jacobins entered it, vowing vengeance against Royalist and Girondist alike. The bible had been publicly burnt and its ashes scattered to the winds, and the bloody guillotine continued its sickening butcheries. Amongst the innocent victims was Ampère's father, who died forgiving the murderous *sans-culottes*, declaring his faith in God and avowing his love for his country. His letter to his wife is exceedingly touching. He names certain debts which he wishes paid, and reminds her that part of his money had been spent on books and instruments for the son. This he considered prudent economy, as the youth had had no teacher; but the father was not far astray when he predicted: "As to my son, there is nothing that I do not expect of him." Indeed, at this time he had read the French Encyclopedia of twenty volumes, and had also mastered the writings of the great mathematicians.

After the tragedy of 1793, his enthusiasm was again fired by reading Rousseau's letters on botany, and for three years he devoted himself to that study. Then he turned to mathematics and physics, and later to chemistry, of which he had a profound knowledge. The next subject to which he turned, with his usual enthusiasm, was matrimony, like many a young man, with no prospects in life. Two years later he was made Professor of Chemistry and Physics at Bourg at $400 a year, on which he had to support his sickly wife and their son. The letters between them reveal a most pathetic story. His wife encouraged him in all his scientific pursuits, though it was difficult to supply a respectable wardrobe. "Be careful with your chemical experiments," she writes, "your stockings are ruined with that abominable acid which burns everything."

Ampère's first discovery was in the Theory of Probability, and he hoped this would secure him a position in the College of Lyons. It was some time before a mathematician of sufficient ability could be found to determine whether the discovery was really new or not, but, at last, Laplace examined it, and a letter of thanks from the French Institute to the author served to establish his reputation. About this time the astronomer Delambre was making appointments to the College at Lyons, and he received Ampère with open arms, and gave him the coveted promotion. But just as the goal is reached the cup of happiness is dashed from his lips—his heroic wife was stricken with a mortal malady, and all his bright prospects were buried in her grave. Soon the honors flowed upon him, and, to crown all, he was appointed Professor of Physics at the Collège de France, and elected Member of the Institute—the two highest honors which his country could bestow.

Soon after this he plunged into metaphysics, and it was related that at one time he talked with wonderful lucidity upon his system of the universe for thirteen hours. But he still was interested in physics; and an anecdote was related of Ampère and Cauchy figuring, all unconsciously, with chalk upon the back of an old Parisian four-wheeler.

Discoveries in electricity much interested him. In 1812, at a meeting of the Academy of Sciences, he made this remarkable communication: "A set of magnetized needles, equal in number to the letters of the alphabet, put in motion by conductors communicating with the battery by means of a key-board, the keys of which could be depressed at will, would render possible a means of telegraphic communication which would overcome distance, however great, and would be swifter than either writing or speech for the transmission of thought." This is certainly a clear anticipation of the electric telegraph, which has earned millions upon millions, but which is here given freely.

Ampère is really the founder of electrodynamics, and his explanations and statement of the laws by which current acts upon current have never been superseded. He knew that currents acted upon magnets, and he set himself to study the effects currents produced on each other. To do this he arranged conductors of various shapes, and many beautiful propositions in reference to small closed currents were enunciated. He invented the soleroid magnet, and peopled the current with manikin swimmers. The effect of the earth upon a closed circular current was deduced and demonstrated. Indeed, Ampère's discoveries in the field of electrodynamics were certainly as hard as Newton's discovery of gravitation; and altogether he is one of the brightest stars in the firmament of physics. He died at Marseilles, June, 1836.

## PARODY ON KINGSLEY'S "THREE FISHERS."

Three students came home from the school each night,
From the school each night as the sun went down;
Now each had resolved in his study to stay,
And avoid the alluring temptations of town.
For exams. must come off in a fortnight or so;
Indulgences all they resolved to forego,—
Yes, even the maids and flirtation.

Three maidens were making their toilet each night,
Were fixing their hair as the sun went down;
When the students, their firm resolutions despite,
Came and took these three maidens out into the town.
Let exams. come off in a fortnight or so;
These students are happy, but all that they know
Is of maidens and idle flirtation.

. . . .

Three fizzles were made at the next exam.,
Success would decline the poor efforts to crown
Of the students who vainly depended on cram,
And wasted their time with fair maidens in town,
When exams. are on hand in a fortnight or so,
Beware, all you lads who to college would go,
O, beware of the girls and flirtation.

E. Saw, '95.

Hereafter the libraries of Ann Arbor and Williams are to be open on Sunday afternoon.

Yale will attempt two new ventures in journalism the coming year. The first will be known as the *Yale Law Journal*, and will be a fifty-page paper, or book, issued semi annually in the interests of the law students. The second is the *Yale Alumni Weekly*, which is really an adjunct of the *Yale Daily News*, being owned and controlled by the *News* board. It will aim to furnish the news of each week in convenient and condensed form, and to establish a closer bond of union between Yale alumni and under graduates.