

SCIENCE:

A WEEKLY NEWSPAPER OF ALL THE ARTS AND SCIENCES.

PUBLISHED BY

N. D. C. HODGES,

47 LAFAYETTE PLACE, NEW YORK.

SUBSCRIPTIONS.—United States and Canada.....\$3.50 a year.
Great Britain and Europe.....4.50 a year.
Science Club-rates for the United States and Canada (in one remittance):

1 subscription 1 year	\$ 3.50
2 " 1 year.....	6.00
3 " 1 year.....	8.00
4 " 1 year.....	10.00

Communications will be welcomed from any quarter. Rejected manuscripts will be returned to the authors only when the requisite amount of postage accompanies the manuscript. Whatever is intended for insertion must be authenticated by the name and address of the writer; not necessarily for publication, but as a guaranty of good faith. We do not hold ourselves responsible for any view or opinions expressed in the communications of our correspondents.

VOL. XIII.

NEW YORK, MARCH 15, 1889.

No. 319.

CONTENTS:

JOHN ERICSSON.....	189	THE RESOURCES OF THE NYASSA REGION, EAST COAST OF AFRICA	200
THE DENIO FIRE-ALARM.....	191	BOOK-REVIEWS.	
AN IMPROVED ELECTRIC SYSTEM.....	192	Occasional Addresses on Educational Subjects.....	201
GRAY'S TORSIONAL TESTING-MACHINE	194	A Treatise on Hydraulics.....	201
THE MACRÆON SECONDARY BATTERY.....	194	A General Formula for the Uniform Flow of Water in Rivers and other Channels.....	202
ELECTRICAL NEWS.		AMONG THE PUBLISHERS.....	202
The Velocity of Light	195	LETTERS TO THE EDITOR.	
Absolute Resistance of Mercury.....	195	An Acoustic Mill <i>A. E. Dolbear</i>	204
Electric Locomotives for Mines.....	195	Note on the Robinson Anemometer Constant <i>Wm. Ferrel</i>	204
Felling Trees by Electricity	196	The Soaring of Birds <i>L. M. Hoskins</i>	205
HEALTH MATTERS.		Shall We Teach Geology? <i>Alexander Winchell</i>	205
Public Inspection of Food	196	To keep Water-Mounts Moist <i>E. B. Knerr</i>	205
Cholera Contagion in Drinking-Water.....	196	The Wind-Pressure Constant <i>Wm. Ferrel</i>	205
NOTES AND NEWS.....	196		
EDITORIAL.....	198		
John Ericsson.			
PUBLIC HEALTH A PUBLIC DUTY....	198		

JOHN ERICSSON was a man with the best of brain-power, with confidence in himself, who lived at a time when the world was ripe for what he could best do. He was essentially a great mechanical engineer. And not only was he fortunate in the age in which he lived, but he was wise in his choice of a place of residence. The fate of mechanical inventions is like that of the seed in the parable: the invention must fall on a proper soil, and be nurtured by favorable circumstances of time and place, in order to bloom into success. Thus Ericsson was early led from his home in Sweden to England, where he found a congenial environment till the conservatism of the English Admiralty drove him to this country. He was a man accustomed to carry through to useful perfection any scheme which commended itself to his mind; and, having confidence in himself, he found criticism difficult to endure. He knew he was right in his propeller for steam-vessels, and quickly left the country which refused to adopt it for America, where within two years the new device was in use on forty-two vessels. He knew he was right in his "Monitor," and was mortified and indignant at the hesitation of the American naval board in giving him a contract for building the first of this class of war-vessels. His work in each of these cases was not simply the devising of a form of propelling apparatus which would be better than the old side-wheel, or of a form of ironclad which was the best there was at the

time; but every mechanical detail of the "Princeton" and of the "Monitor" received some improvement at his hands.

Such was the man, and such was his work. He had the perseverance, the capacity to appreciate the importance of details, and the confidence in himself, which lead to success. And what was his reward? Doubtless he received considerable payments for much of what he did; but in the case of the "Princeton" it is said the government is still his debtor, and in that of the "Monitor" he received only the amount due him on his contract. As an inventor who supplied the government with an all-important engine of war, he received not a cent. Nor would he listen to the suggestion frequently urged on him by congressmen and others, that Congress should be asked to recognize his claim, and to provide for it. The Legislature of New York passed a resolution, thanking him for his services to the country, which he insisted on freely giving; and these resolutions he highly prized. Ericsson is said not to have cared for money, and this would certainly seem to be true.

The respect shown at his funeral was such as is seldom seen at that of any private citizen. The streets in the neighborhood of his late residence were crowded from the early morning hours with thousands, who for four hours passed through the house to pay homage to the departed genius. New York is a place full of human beings,—so full that each pays little or no heed to his neighbor; yet the great respect for this man of science and of action was shown in the number and character of those who followed his remains to their resting-place, in the uncovered heads as they were borne along the busy streets, and in the impossibility of admitting to Trinity all that wished. Ericsson was a man who could have endeared many to him, but he had a strong sense of duty to his work, which induced him to make few friends. This final homage of the unmindful crowds of the great city was to his genius well applied.

PUBLIC HEALTH A PUBLIC DUTY.

THE address of President Charles N. Hewitt, at the sixteenth annual meeting of the American Public Health Association, was full of suggestion, and contained many valuable propositions. It was entitled "Public Health a Public Duty," and dealt with the organization, powers, and relations of local, State, and National boards of health. In reviewing the work of the association, and the progress made in sanitary science during recent years, he said:—

"As secretary of one of the oldest of the State boards [Minnesota], I had the honor of an election as an original member of this body, and have known its history since. In my own State, beside, I have been missionary at large, and served as the organizer and counsellor of many a local board, and as sanitary inspector and health-officer as well. I have seen our organizations grow from two feeble boards with ill-defined powers, in 1872, to over fourteen hundred, united under a common code of law, with largely increased powers, duties, and funds. There is not to-day in Minnesota a community, however small, without such a board in direct communication with the State board.

"The State boards of health have increased from three in 1873, to thirty-one in 1888. Largely through their efforts, popular knowledge and confidence have grown from the tentative methods of the past to the demand for, and more liberal support of, sanitary organization and positive work. More and better legislation, great sanitary engineering works, and a bountiful crop of private enterprises in the same direction, are among the evidences that our field is widening and our responsibilities increasing. We have seen the early examples of efficient State executive organization become a living force in many more of the States and Canada. Various departments of modern science are our willing helpers. Microbiology has opened up great stores of discovery, and awakened great hopes, which we trust may not fail. We have seen the be-