

presently, raising his voice a little as if in an access of courage—"Thou knowest how dear to our hearts is Thy handmaiden, this beloved sister who sits in sorrow among us to-day. Thou knowest how we love her. Thou knowest that her afflictions are ours. And oh, dear Father, if it be possible, grant that when we have reverently put this poor little symbol of our common sorrow out of sight forever, Thy peace may descend and fill her heart and ours with Thy everlasting benediction."

The words, which had come slowly, though without apparent effort, might have been inspired. Surely they sounded to the women who waited as if uttered by a voice from Heaven, and to their spiritually attuned ears it was a voice comforting, composing, quieting.

After this followed a reading of Scripture—a selection taken for its wide application to all God's sorrowing people—and the singing of the beautiful hymn,

"God shall charge His angel legions
Watch and ward o'er thee to keep."

This was sung, without a break, from the beginning clear through to the end, with its sweet promise to the grief-stricken of "life beyond the grave." Then came the benediction—the benediction of the churches since the days of the apostles, used of all Christians the world over, but ever beautiful and new—"The peace of God, which passeth all understanding, keep your hearts and minds," etc.

All the company had risen for this—

all excepting Miss Mary Ellen, who during the entire ceremony had not changed her position—and when it was finished, when the moment of silent prayers was over and one by one the women rose from their knees, there came an awkward interval pending the next step in this most difficult and exceptional service.

The little woman in whose behalf it had been conducted, for whom all the prayers had been said, made no sign by which her further will should be made known. It had been expected that she would herself go to the burial, and against this contingency a little grave had been prepared in the family burial-ground, which, happily, was situated upon her own ground, in a grove of trees a short distance from the house.

After waiting for some moments, and seeing that she still did not move, the reverend brother finally approached her and laid his hand as before upon her head. Then quickly reaching around, he drew her hand from beneath her cheek, felt her pulse, and now, turning, he motioned to the doctor to come.

The old man, Dr. Jenkins, lifted her limp arm tenderly and felt her wrist, listened with his ear against her bosom, waited, and listened again. And then, laying back the hand tenderly, he took his handkerchief from his pocket and wiped his eyes.

"Dear friends," he said, huskily, "your prayers have been answered. Sister Mary Ellen has found peace."

WIND AND WAVE.

BY G. E. WOODBERRY.

WHY wilt thou make, O Wave,
Forever in from the bay?
Dost thou seek on the beaches' grave
To cast thy life away?

Why wilt thou blow, O Wind,
Forever out to sea?
Is it death thou too wouldst find,
O winged eternity?—

I told my love unsped
To both in the eventide;
The wild Wind moaned, and fled;
The wild Wave sobbed, and died.

GREAT AMERICAN INDUSTRIES.

EDITED BY R. R. BOWKER.

XII.—ELECTRICITY.

"WHAT is electricity?" That is a question no man can yet fully answer. In a great electric station you may see a huge engine "turning over" two big copper wheels. They are doing no work, and require little steam. The day darkens; lights are turned on through the city. A man at the switchboard "throws in" the switches, bringing the two dynamos into circuit, and connecting them with the copper conductors through the streets, and presently the two wheels require all the power the 2500 horse-power engine can supply, and are lighting 25,000 electric lamps. But the wheels turn at the same speed; you cannot see or feel any difference. The men who make the dynamos and the men who operate them know how to produce electricity, but Mr. Edison himself, standing by an Edison dynamo, could only tell you the "how," and not the "why." Yet for thousands of years this great power has been in the universe, waiting for nineteenth-century man literally to find it out. The discoverer, the inventor, only un-covers or comes to the force already in the universe for the service of man. The nineteenth century, in the person of a Kelvin, an Edison, a Tesla, or a man yet unknown, may answer the question, or it may be left unanswered to the twentieth.

We know electricity from its effects and through its relations with other forces. It is a force, having an effect on matter. No force can be *made*. We do not make electricity; we only convert other force into it. Electricity is produced by and produces magnetism. It produces and is produced by heat, mechanical force, chemical force.

When thus produced, an insulated body can be "charged" with it, or electrified. The force is then in suspended animation as static (stand-still or passive) electricity. When a less electrified body is brought near, the force leaps free, and the electrified body is discharged with a shock or spark. Or, thus produced, the force can be transmitted, as dynamic (force-full or active) electricity, along the lines of conductors. This is the electric current.

When a man is packed in a crowd, if he moves or is moved, he must push his next neighbor, and he will push that particular next neighbor who moves easiest or makes least resistance. All forces act in this "line of least resistance." Silver, copper, etc., are of "low resistance" to electric force, and are good "conductors" of electricity; paraffine, rubber, glass, mica, are of "high resistance," will not conduct, and are "insulators." Yet every conductor resists somewhat—there is some "loss" or "drop," the electricity turning into heat; every insulator conducts somewhat—there is some "leakage" of current.

Force must always do work: no force can be lost. If the man in the crowd, as he is pushed and pulled, puts his hands on the man in front of him, and he on the next, to the edge of the crowd, and the last man grips a pump-handle, the push and pull at the centre, thus passed on, will work the pump. This is how work is done at a distance by the force of electricity. If the men are close together in a ring, and one shoves forward, the shove will be passed all around the ring till the first man's shove hits himself in the back. The men would not move round, but the force would. This is like the electric "circuit."

Place a rubber band around a finger, and begin to twist it. The twist seems to run round the ring, starting in one



THE "CIRCUIT."