

INTRODUCTION.

WHEN Franklin drew from the clouds the electric spark upon the cord of his kite, it seemed obvious that electricity might be made use of for the purpose of telegraphy; and more than one hundred years ago Lesage established a telegraph in Geneva by the use of frictional electricity. But this force had very little power when transmitted over a long distance, and that little was practically uncontrollable, and therefore useless for telegraphy.

When galvanism was discovered, at the beginning of the present century, and the voltaic battery invented, it was at once supposed that this new form of electricity might work a telegraph, and ten years later the chemical telegraph was invented by Coxe, in Philadelphia. Under this system, the two wires from a galvanic battery were made to approach each other in a cell of water. When the galvanic circuit was closed, the water between the opposite poles, which were near each other, was decomposed, and a bubble of hydrogen rose to the surface, as the bubble from champagne does in the wine cup; and the observer, seeing it, knew that a current was passing, and that the bubble was the signal. But it was evanescent

"—— like snow falls in the river,
A moment white, then melts forever."

In 1820, Oersted discovered that an electric current would deflect a magnetic needle, and Arago and Davy simultaneously