

OUR BOOK SHELF

Familiar Wild Flowers. Figured and Described by F. E. Hulme, F.L.S., F.S.A. With Coloured Plates. Parts I.-XIII. (London: Cassell, Petter, and Galpin.)

THERE has certainly been a wonderful improvement of late years in the art of chromo-lithography as applied to botanical illustrations; and the specimens in the work before us are among the best that we have seen. The colouring, the outline drawing, and the general representation of habit, are all remarkably true to nature. The floral initial letters and tail-pieces, which are stated to be drawn "by various artists," are not so uniformly successful. Each part, published at the remarkably low price of sixpence, contains two coloured plates, more than one species being occasionally placed on a plate. The accompanying letter-press descriptions, though rather shorter than would in many cases be desirable, are written in plain and easy and not too technical language. There is no indication of the proportion of the British flora intended to be included under the designation of "familiar wild flowers;" but whenever the volume is completed, it will be a useful addition to our popular botanical literature, and well calculated to promote an accurate knowledge of the common plants of our fields and hedges.

Heroes of South African Discovery. By N. D'Anvers. (London: Marcus Ward and Co., 1878.)

The Countries of the World. By Robert Brown, M.A., Ph.D., &c. Vol. ii. (London: Cassell. No date.)

The Life of Sir Martin Frobisher. By the Rev. Frank Jones, B.A. (London: Longmans, 1878.)

THERE seems to be no end to the number of geographical works published nowadays. Mr. D'Anvers's work is a companion volume to "Heroes of North African Discovery," by the same author, already noticed by us. Like its predecessor its numerous pictures and the many adventures of the "heroes" of its pages will render it attractive reading for boys, who, if they read it faithfully, will carry away with them much valuable information. The work does not pretend to anything like minute research, but so far as it goes, it is, we believe, trustworthy.

The present volume of Dr. Brown's work, which may be taken as a typical specimen of Messrs. Cassell's showy popular publications, deals mainly with the United States and Mexico. Dr. Brown has taken considerable trouble to obtain varied information concerning the different States, and his account of them is fairly full and accurate. In a work like this he cannot be blamed for repeating the oft-told story of his adventures in the west and north-west, though the style, rather than the stories, pall somewhat on one. The pictures, we believe, may be taken as on the whole what they purport to be; though it is curious to notice the uniformity of Nature under different conditions, and at widely separated places. One of the illustrations connected with Mexico is entitled a "Lagoon in the Sierra Calientes." Dr. Brown will be interested to know that an exactly similar scene is pictured as occurring on the banks of the Ucayli in South America, in "Paul Marcoy's" Travels; but as it is doubtful if "Paul Marcoy" was ever many miles from Paris, the "Scene on the Ucayli" may be as mythical as his "Travels."

Judging from the formidable list of authorities given by Mr. Jones, his life of the rough, but brave and even chivalrous old Frobisher must be the result of much research. Mr. Jones seems, however, to be entirely deficient in literary skill; his materials have been put together in the crudest manner possible. Though Frobisher added little to geographical knowledge, he deserves a place among the heroes of the North-West Passage for his three attempts to discover it. Unfortunately the object

of his last two expeditions was to bring home shiploads of the "black earth" which people had been deluded into believing was rich in gold, and all Frobisher's efforts at discovery were balked. His life deserved to be written, but we cannot say that Mr. Jones has shown himself competent for the task.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

The Telephone

THE following experiments lately made as to the use of the telephone in connection with a magneto-electric machine, have given results which are somewhat interesting.

In the first instance a small medical magneto-electric machine was employed with the result (described by Mr. A. Percy Smith, NATURE, vol. xvii. p. 380), of a loud click at each rotation of the bobbins in front of the magnet. Driving the former by means of a small turbine, the clicks combined to form a loud musical note which rose and fell as the speed of rotation was increased or diminished. This note was well heard through a resistance of 32,000 units.

A magneto-electric exploder having two horseshoe magnets, four bobbins, and two rotating armatures was next employed. This gave a loud sound through 57,000 units of resistance. With a view to test the power of the machine to work through bad insulation, it was tried through about thirty yards of bare copper wire lying on wet grass. The sound was still powerful.

A break was then made in the line by cutting it across and dipping the two ends in a fountain basin filled with water. The two ends in the water were about twelve feet apart, and the sound was still perfectly audible. It was found in this experiment that it was *not* necessary to connect the magnetic exploder to earth, and that a sound feebler, but quite distinct, was obtained when *only a single wire was led from it*. The line was thus from exploder through twelve feet of water to telephone, the other binding screw being connected to a wire simply touching the wet gravel, there being therefore no return line.

Again the exploder and telephone were connected to a stretched wire belonging to a fence, at a distance apart of about fifty yards. The wire was supported by fifteen intermediate iron uprights with their ends buried in the ground. Earths were made for the telephone and exploder by means of a clasp knife and a little garden fork. A perfectly distinct sound was heard.

Lastly, one terminal of the exploder and telephone were connected by a wire, the others being joined by a length of twenty-four feet of thin string dipped into river water and subsequently drawn through a dry cloth. An audible sound was noticed.

The above experiments seem to point to two conclusions:—

1. That magneto-electric currents can be employed through exceedingly defective insulation, almost no insulation, in fact.

2. The omission of the earth connection of the exploder seems to indicate that the production of the sound is due either to a very slight leak from the exploder to earth—the machine was inclosed in a wooden box standing on a wooden table—or, not impossibly, to the rapid variation of potential in the line.

In the way above indicated it would appear to be possible to transmit the Morse code by means of magneto-electric currents under conditions which would render a battery absolutely inapplicable.

GEORGE S. CLARKE

HERBERT MCLEOD

Cooper's Hill, April 17

Poisonous Australian Lake

PERHAPS some of your readers may be interested in the following:—

This year the lakes forming the estuary of the Murray have been very low and the water unusually warm. The river is very low and the inflow to the lakes very slight and having a temperature of 74° F. Lake Alexandrina—on calm days surface