

PROPOSED NEW BRITISH POLAR EXPEDITION.

Our readers are probably aware that an influential Central Committee has been formed in England, to which forty-nine Provincial Committees are affiliated, for the purpose of organizing an expedition to the North Pole on the plan recommended by Commander Cheyne, R.N., who is strongly of opinion that balloons will form an important element in all future Arctic explorations. Our illustration depicts the three balloons as ready to start from the winter quarters of the ship during the first week in June, their destination being the North Pole. The average temperature in the early part of June is about 25° Fahrenheit. The balloons are named *Enterprise*, *Resolute*, and *Discovery*, each will be capable of lifting a ton in weight, the three carrying a sledge party intact, with stores and provisions for fifty-one days. The ascent will be made on the curve of a roughly-ascertained wind circle, a continuation of which curve will carry them to the Pole, but should the said curve deflect then the required current of air can again be struck by rising to the requisite altitude, as proved by experiments that different currents of air exist according to altitude; this fact Commander Cheyne himself observed when, in charge of the Government balloons in his last expedition, he sent up four at the same moment to different altitudes, being differently weighted; they took four different directions to the four quarters of the compass, giving him his first practical idea of ballooning in the Arctic regions. Captain Temple's experiments with the war balloons from Woolwich Arsenal have fully confirmed this important desideratum in aerostation. About thirty hours would suffice to float our aeromats from the ship to the Pole, should all go well. We asked Commander Cheyne how he was going to get back; his answer was cautious—"According to circumstances," he said. "My first duty is to get there. When there, leave it to us to get back. We have many uncertainties to deal with, and a definite programme made now might be entirely changed when the time came to carry out the journey south. Condensed gas would be taken in steel cylinders, hills would be floated over by expansion and contraction of the balloons, and in the event of any accident occurring, we always have our sledge party with sledge, boat, stores, and provisions for fifty days intact and ready for service." Scotland has taken up this novelty in Arctic exploration with avidity, and England, though more cautious in the matter, has at last given her adhesion to the project being carried out. Canada is likely to join, and Commander Cheyne has received an invitation from the Canadian Minister of Finance, Sir Samuel Tilley, K.C.B., to deliver his lectures in Canada, with the promise of a warm reception.

SIR WILLIAM FOTHERGILL COOKE.

The projector and constructor of the first telegraph line in England, Sir William Fothergill Cooke, died recently. He was born at Ealing, in 1806, and after graduation at the University of Edinburgh, spent five years in the service of the East Indian Army. On his return he took up the study of anatomy and physiology first at Paris, continuing at Heidelberg. At the latter place, in 1836, his attention was directed to the subject of electricity, to which he soon devoted himself exclusively. He constructed an experimental telegraphic instrument, which he took to England and endeavored to introduce on the Liverpool and Manchester Railway. This was two years after Professor Morse had privately demonstrated the success of his invention. Associating himself with Wheatstone, Cooke perfected his invention, so far at least as to make it practicable, and in June, 1837, Cooke and Wheatstone together took out the first patent for an electric telegraph, the mechanism of which, however, was quite unlike that of the Morse instrument. The first line constructed by Wheatstone and Cooke was finished early in 1839, and several other lines had been set up in England before Morse's Washington and Baltimore line was constructed in 1844. Cooke was knighted in 1869, and pensioned in 1871.

New Publications.

We are in receipt of *Lamb's Illustrated Catalogue of Ecclesiastical Work*. In some of past numbers we gave several illustrations of church furniture from designs by Cox & Co., of London, but the cost of freight and duty combined has always been a drawback to the importations to the Dominion of church furniture and other ecclesiastical work. We recommend all interested in this subject to obtain a circular from the firm, J. & R. Lamb, 59 Carnarvon street, New York. The price of the catalogues is as follows:—Woodwork and Furniture, 10c.; Metal and Stone Work, 10c.; Banners and Embroideries, 10c.

Correspondence.

To the Editor of THE SCIENTIFIC CANADIAN:

Sir.—In reply to "R. J.," in your July issue, I would state, that traps to water-closets, &c., as ordinarily constructed, are a delusion, and but very imperfectly perform the duty expected of them.

I do not know what is considered a proper seal, but it has been demonstrated that a three inch seal will only resist a pressure of four ounces to the square inch, and, further, that it only requires from three to four hours for the gases in the soil pipe to impregnate the water in the trap and make their presence known in the hopper. In addition to this the seal can be broken by what is known as "syphoning," as well as by suction caused by the discharge of a large volume of water from the bath pan, or another closet emptying into the same soil pipe.

"R. J." is perfectly correct in his supposition that the water in the trap is always foul; this is especially the case during the night, or when the closet has not been used for several hours, and in the morning when the lever is raised a small magazine of foul air is at once discharged through the hopper into the room. Neither can he depend upon several flushings clearing all the soil out of the trap.

Let your correspondent construct his closet on the "Downward Ventilation" plan, and he will find that not only will he have perfect safety from the ascent of foul air, but will also have the room in which it is situated ventilated.

This consists in inserting a breathing pipe into the soil pipe of the hopper, six or eight inches above the level of the water in the trap, and at such an upward angle therefrom that paper or other foreign matter cannot block its orifice. This breathing pipe should not be less than three inches in diameter, and can be made of galvanized iron, having the seams and joints well soldered. It must then be carried to a chimney in which there is a constant draft (usually the kitchen chimney is the best). Now let that bright and beautiful pan at the bottom of the hopper be entirely removed, its presence there is only an obstacle to the free ventilation of the closet.

If this simple mode of ventilating is only properly carried out, there will be a constant current of air downwards through the hopper and into the breathing pipe, thence to the chimney, where all the gases are deodorised and disinfected by mingling with the smoke from the fire below. Yours, etc., N. T.

Toronto, July 25th, 1879.

DRUG TAKING MANIA.

Women are rather more given to drug taking than men, though both are bad enough in this respect. Here is what one of our most eminent physicians has to say on this subject:

"Dr. Holmes has said that it would be well for the world if most medicines were thrown into the sea; that it might be bad for the fishes, but it would be better for mankind. For this unasked and impertinent suggestion he has received a good deal of orthodox censure, which I have now to share with him, for I am of the same opinion as Dr. Holmes, and this opinion has long been a part of my Christian faith. That the major part of the world does not agree with us is plain. Indeed most people seem to think that the chief end of man is to take medicine. Babies take it in their mother's milk; children cry for it; men and women unceasingly ask for it. Shrewd men have taken advantage of this instinct, and in most civilized nations it is to-day one of the chief articles of manufacture and commerce. It is one of those things which are never permitted to be out of sight; but are thrust upon you in the nursery, in the streets, upon the lamp posts and upon the curbstones, along the highways, from the rocks which border the rivers; the medicine chest follows you at sea, as if the sea itself, a vast gallipot of nauseants, were not enough. One might naturally suppose that the supply would at length exceed the demand! but it does not. Everywhere the people are stretching out their arms and begging for medicine, blessing him who gives and cursing him who withholds. They believe, in their simplicity, that if medicine does no good, they can at least do no harm. They imagine, also, that there is a medicine which may be regarded as a specific for every human malady, and that these are known to science, and that therefore we have the means of curing all diseases; but the people imagine a vain thing. Whatever medicine is capable, when properly administered, of doing good, the same medicine is equally capable, when improperly administered, of doing harm; and drugs often substitute a malady more serious than that which they were intended to cure. The Irishman said his physician stuffed him so with medicine that he was sick a long time after he got well.—Dr. Frank Hamilton.