

Science Siftings

By 'Volt'

A Tide-predicter.

As most business people know, there are machines, large and small, now on the market that do all sorts of complicated calculations. The latest of these is a tide-predicter, which computes the time of high and low tides, now used in the United States Coast Survey Office at Washington. The predictions are made for one year in advance, and the machine does the work of forty expert computers.

Bone-grafting.

A novel bone-grafting operation is reported from Egypt by Dr. Voronoff. The removal of a tumor left a large hole in the rear of the skull, and instead of inserting the usual metal plate the surgeon decided to try a piece of the shoulder-blade of a live sheep. The wound healed promptly, when the accurately-fitted graft was found to be perfectly joined to the surrounding skull.

A New Motor.

A new motor, which it is believed will drive steamships through the ocean at the rate of 100 to 150 miles an hour, has been invented. It consists of a pipe which runs through the hold of the vessel below the water-line. Near the after end of this pipe is a cylinder charged with gas, which is vaporised from kerosene oil. An electric sparker explodes this gas, which is forced out through the pipe at the end of the boat. This gives the boat a kick which drives it ahead. At the same time the gas driving through the pipe at the stern creates a vacuum at the forward end into which the water rushes, so that the boat is drawn ahead at the same time that it is driven forward by the kick.

Paper from Cotton.

Another use has been found for the great cotton crops of the South. The manufacture of paper from the fibre of the cotton stalk is said to be possible. It is asserted that all grades of paper, from the best linen to the lowest commercial grade can be manufactured from cotton stalks; and in addition many by-products such as alcohol, nitrogen, material for gun-cotton and smokeless powder. It is estimated that on an area of land producing a bale of cotton at least one ton of stalks can be gathered. Upon this basis, from 10,000,000 to 12,000,000 tons of raw material could be secured for the production of paper, which would increase the value of the South's cotton crop nearly £2,000,000.

A Gigantic River.

In South, as in North America, nature does her work on the grand scale, and one of her noblest achievements is the Amazon River. Rising in the Andes, it flows across the continent and discharges into the Atlantic Ocean at the Equator. The vastness of the area which it drains, amounting to 2,368,000 square miles, will be evident when it is borne in mind that this is more than the area of Russia in Europe and Austria-Hungary. It has a length of nearly 4000 miles, is navigable for 2300 miles from the sea, and is fed by numerous streams, which in any other country would be ranked as great rivers. In the wet season, which lasts for about eight months, its width varies from five miles to 400. No wonder the Amazon has been called a gigantic reservoir, rather than a river.

The Human Voice by Post.

To send the human voice on a card through the mails is the object of the phonopostal, an invention which, like the record of a phonograph, registers and reproduces the human voice. The records are made by an ordinary phonograph of the simplest possible type by means of a stylus provided with a sapphire point. This point presses on an impressionable substance, called 'sonorine,' spread on the surface of the card. Sonorine is able to stand the strain of transmission by mail. The sounds are inscribed in a spiral, which commences at the outside edge of the card and continues in an ever-narrowing curve until it forms a small circle, hardly the diameter of a small coin. The record is so deeply engraved in the coated cardboard that not more than two or three syllables are lost by the two stampings of the post office on the concentric lines.

Intercolonial

A number of priests for Australian dioceses arrived by the 'Oruba' in Melbourne on October 31.

His Lordship Dr. Broyer, Bishop of Samoa, was expected to reach Sydney last week from Europe, where he had been some eight or nine months. He is bringing with him several missionaries for the Pacific Islands.

During the last week in October the Irish envoys, Messrs. Devlin and Donovan, held meetings at Bathurst, Wellington, Parkes, Dubbo, Forbes, and Cobar. At the first mentioned place a sum of £140 was subscribed.

The Victorian Government statist (Mr. E. T. Drake) has issued returns showing that the population of Victoria has increased during the last nine months by 13,162 persons.

Miss Dolly Castles concludes her engagement under Mr. J. C. Williamson at the end of November, and will leave for London in January. She received by the last English mail an invitation from the London Gramophone Company to sing on her arrival in London all the principal airs from Gilbert and Sullivan's operas for the company's records.

His Lordship Bishop Murray, Bishop of Cooktown, has recently travelled over a large portion of his extensive Vicariate, and reports that nearly everywhere there are evidences of remarkable progress and prosperity. Several new churches are being erected or projected in various centres, and his Lordship is very pleased at this proof of the faith and energy of his people.

On Sunday afternoon, October 25, his Eminence Cardinal Moran blessed the foundations of the new wing and additions to Mount St. Mary's Convent, Golden Grove. There was a very large gathering, and when his Eminence, who was accompanied by the Right Rev. Mgr. O'Haran, and Messrs. Joseph Devlin, M.P., and J. T. Donovan, the Irish delegation to Australia, arrived, he was met by the Rev. Father M. Fitzpatrick, who has charge of the parish, and a guard of honor of the Hibernians, Guilds, and Foresters in regalia.

In every branch of a liberal education, the schools and colleges conducted by the religious teaching Orders of this, as of the other parts of the Commonwealth (writes the Melbourne correspondent of the Sydney 'Freeman's Journal'), show marked excellence. In music-loving Australia it is an advantage to find these scholastic institutions holding their own—and more than their own—in vocal and instrumental music. This statement rests on the University test. The results of the theoretical and the practical examinations in music have been given to the public, and our conventual establishments hold a splendid position.

The cabled report of Mr. D. O'Connor's success in the United States following upon his misfortune in San Francisco, is very gratifying to his friends in Australia (says the Sydney 'Freeman's Journal'). The cable message which was received by Mr. O'Connor's son in Sydney recently stated that the reception given the veteran in New York by Mr. Spalding, the publisher, was royal. That gentleman's firm placed 5000 dollars to the credit of his guest, whose book he intends to publish, and Mr. O'Connor had the splendid opportunity of speaking at the monster meetings addressed by T. P. O'Connor in New York, and in the cities of Pennsylvania and Canada. Mr. O'Connor adds that 'Sir Wilfrid Laurier treated me nobly,' and that his health is magnificent.

The Bishops of the Victorian Province, under the presidency of the Archbishop of Melbourne, held a conference recently regarding the new training college for teachers at Albert Park. The inspectors of schools, a clergyman representing each diocese, and four representatives of the training college were also present. It was decided to establish a loan fund in connection with the college similar to that which exists at the Cambridge Training College. The object of the fund is to enable promising students of limited means to pursue their studies in the college, on the understanding that they afterwards repay the amount advanced to promote their education. The prospects of the college were said to be very satisfactory, seeing that, although it had been established only six months, a large amount of work had been already accomplished. The systematic training of teachers for Catholic secondary and primary schools was said to receive considerable attention, and the interchange of opinions had led to the adoption of uniformity in the management of the schools in the various dioceses of the State.