

Science Siftings

BY 'VOLT'

Adopting Greenwich Time.

The clocks of France are soon to be set back nine minutes, and, according to the law recently adopted, they are to mark the time in conformity with the time at the great observatory at Greenwich.

Turbine Engine is Defined.

There are probably few people outside the ranks of engineers who know what a turbine is. 'The best idea I can give of it,' said an engineer, 'is to liken it to those paper windmills which spin on the end of a stick, and which are sold to children in the streets. A turbine, in fact, is like a series of these revolving wheels fixed one behind the other, only instead of being turned by the wind, it is revolved by jets of steam. The turbine wheels turn on a shaft inside a cylinder, in the interior of which are fixed a number of stationary blades which project into the spaces between each wheel. The purpose of these blades is to catch the steam and direct it on to the wheels at an angle where it will exert the most force. As the steam enters the cylinder it is caught by the stationary blades and deflected on to the blades of the first wheel, which are set turning. The steam then passes to the next, until all the wheels are set whirling and the ship is driven through the water.'

Accounting for Milk in the Coconut.

Probably everybody has wondered at times what kind of stuff the 'milk' of the coconut is. One inducement generally held out by the dealer to the prospective purchaser is that the nuts are 'all milky.' Recent analyses, however, have dissipated the delusion that the fluid has anything in common with new milk. It contains only 4 per cent. of solids, consisting chiefly of sugars 2.8 per cent., the balance being made up of mineral matter and tartaric acid. More than half of the sugar present is mannitol, the sweet principle of manna, which is sometimes found also in wine as a product of normal grape sugar. The question has been discussed as to whether it would be profitable to extract the coconut water for the sake of its cane sugar, but as this amounts to only one-tenth per cent., the process would not be commercially successful, in spite of the water being a waste product. Even if the water contained 5 per cent. of sugar, as some specimens appear to have shown, the recovery of this amount would be unprofitable. The juice of the sugar-cane yields nearly 20 per cent. of sugar.

Inventor of the Thermometer.

Thermometers seem to have been invented about the end of the sixteenth or beginning of the seventeenth century, though like many other useful inventions, it is not agreed to whom the honor of the first of them belongs. Boerhaave ascribes it to Cornelius Drebel; Fulgenzio to Paolo Sarpi, and Sanctorio claims this honor for himself, being supported by Borelli and Malpighi. But M. Libri, after bestowing a great deal of labor and research on the subject, maintains, principally on the authority of Castelli and Viviani, that Galileo had invented the thermometer prior to 1597, and that Sagrado perfected it. There is nothing improbable, however, in thermometers having been really invented by several different persons, independently of each other, and much about the same time. It took many years before the instrument was developed in its present form. At first it was a very imperfect measurer of temperature, as air only was used in the tube. This was found to be open to the serious defect that the air was affected by every variation in the atmospheric pressure. The Florentine Academy, about the middle of the seventeenth century, began to employ alcohol instead of air, and this form was introduced to Britain by Mr. Boyle. A great defect in early thermometers was that they had no fixed points from which to estimate relative temperatures. It was reserved to the genius of Sir Isaac Newton to suggest in 1701 those points at which water freezes or boils, and this has met with universal acceptance. Newton used linseed oil in his thermometers, but it was found open to many objections. In 1730 Réaumur designed a spirit thermometer, in which the space between freezing and boiling points of water was divided in 80 degrees. This thermometer is still used to some extent in Germany. The mercury thermometer is generally credited to Fahrenheit, of Amsterdam, who described it to the Royal Society of London in 1724.

Mr. F. Dexter, undertaker and funeral director, the Avenue, Wanganui, gives his personal supervision to all orders entrusted to him....

The Red Post Furnishing Co., Ltd., Devon street, New Plymouth, offers to furnish a four-roomed cottage with every detail complete, packed and delivered to any Railway Station in Taranaki, for £49 16s 5d net cash....

Intercolonial

The fund for the completion of St. Mary's Cathedral, Sydney, now amounts to over £71,000.

The Rev. Father Cogan was welcomed home to Murrumbidgee on Sunday, March 5, by about four hundred parishioners. The popular priest had just returned from a two months' trip to New Zealand. He was presented with a cheque for £95 12s 6d, a gold watch, and a gold-mounted guard; a cross of gold by the ladies, and a silver-mounted umbrella was the gift he received from the children.

On Sunday, March 12, three beautiful stained-glass windows were unveiled and blessed in St. Monica's Church, Essendon (Melbourne), by the Very Rev. Dean Phelan. The chancel window, representing the Crucifixion, costing £260, is the generous gift of the Very Rev. D. B. Nelan. The other windows, representing the Sacred Heart and the Immaculate Conception, costing £60, are respectively the gifts from the sodality of the women's branch of the Sacred Heart and the Children of Mary.

In his Lenten Pastoral the Bishop of Maitland recalls an instance of remarkable interest in the welfare of Catholic education in the diocese—Mr. J. G. Rigney, of Maitland. 'A few years ago,' says Dr. O'Dwyer, 'Mr. Rigney, at his own instance, offered to the Bishop, my venerated predecessor, to provide funds for the permanent endowment of a qualified organiser of our schools. The offer was accepted, and during the last three years the first appointee, a lady qualified with educational diplomas from an English University, has been engaged in promoting the organisation of our schools.'

The Bishop of Sandhurst (Right Rev. Dr. Reville, O.S.A.) and the Bishop of Sale (Right Rev. Dr. Corbett) were given an enthusiastic welcome home. In the course of an interview, Dr. Reville said that during his stay in Ireland there was much rain, rendering it inconvenient for travelling. There were some fine young Irish immigrants on board the steamer on which he travelled, but he regretted that there was considerable opposition in Ireland to the people leaving her shores. Young men were going to America from Ireland despite the discouragement, and it would be much better that they should come to the empty spaces of Australia. At present there was little for the young Irishman to do in his own country. With Home Rule that condition of affairs would be improved.

His Lordship Dr. Reville, Bishop of Sandhurst, who returned to Bendigo on March 1 after an absence of over twelve months in Europe, was accorded a most enthusiastic reception at the Cathedral of the Sacred Heart. In the course of his reply to an address of welcome his Lordship said that since he had been away he had spent some time in England, which they knew was a Protestant country. But he found that in England the Government paid the teachers of Catholic schools, and also furnished them. The caretakers were also paid by the Government. Here in Victoria we were very proud of the mother country, and of the example she set us in many things. He trusted that this example he had mentioned would be emulated by our Government. Catholics would be quite satisfied to give up the public schools, to which they contributed, to the Protestant denomination, and allow them to teach whatever system of religion they might agree upon, if at the same time they received payment for secular instruction. The Catholics were prepared to build their own schools on the same conditions, and to be allowed to teach their own religion. Many of those present had been educated in Catholic schools, and he ventured to say there were no better citizens in Bendigo. His Lordship was presented with a horse and buggy by the Catholics of Bendigo.

Last Monday, by the Orsova, his Eminence Cardinal Moran, his Grace the Archbishop of Hobart (Most Rev. Dr. Delany), his Grace the Archbishop of Wellington (Most Rev. Dr. Redwood, S.M.), and Right Rev. Dr. Gallagher, Bishop of Goulburn, and Right Rev. Mgr. O'Haran arrived at Port Melbourne (says the *Advocate* of March 11). The Cardinal and party were met at the pier by his Grace the Archbishop of Melbourne, who was accompanied by his private secretary (the Very Rev. J. McCarthy), the Very Revs. W. Quilter and R. Collins being also present. They were guests of the Archbishop of Melbourne till Wednesday, when they left for Perth, W.A., where, on the feast of St. Patrick, March 17, the Cardinal, assisted by the Bishops, will consecrate the Right Rev. Dr. Clune, C.S.S.R., who succeeds Dr. Gibney as Bishop of Perth. The occasional sermon will be preached by the Bishop of Goulburn. The Bishops of Sandhurst, Ballarat, and Sale, and over thirty priests accepted the invitation of his Grace the Archbishop of Melbourne to meet the Cardinal and the other visiting prelates at dinner on Tuesday last. Prelates and priests gathered at the pier on Wednesday afternoon to see the Cardinal and party off by the Orsova. The following priests of the archdiocese were also passengers for Fremantle:—Rev. J. Manly (Kew), Rev. R. S. Benson (South Yarra), Rev. J. J. Cusack (Gordon), Rev. J. J. Cusack (St. Kilda East).