

Science Siftings

BY 'VOLT'

New Wireless Service Begun.

The other day William Marconi personally directed an exchange of communications between the wireless stations at Coltano and the stations at Clifden, Ireland, and Glace Bay, Nova Scotia, thus inaugurating a new service by which it is expected the rates of wireless dispatches to America will be greatly reduced. Later Mr. Marconi went to San Rossore, where he was received by King Victor Emmanuel, to whom he made a lengthy report on his recent experiments.

Artificial Daylight from Vacuum Tubes.

Mr. D. McFarland Moore, the inventor of the form of vacuum-tube lighting most commonly seen, has a fine contempt for electric bulb and arc lights. They are 'simply refinements of the torch of the primeval savage, or the common candle,' he said in an address before the Franklin Institute, in Philadelphia. Their light depends upon the heating of minute particles to the glowing-point, so the amount of light depends upon the amount of heat, and even so, 'their scale of color and brightness is limited.' Moreover, they are far from economical and transform into light, even in their most improved form to-day, only a very small percentage of the energy contained in the coal that is put under the boiler. They may therefore justly be described as primitive and inefficient even in their present highly developed form.

China's Mineral Resources.

China's resources of coal and iron are among the largest and most favorably situated in the world. The extent of the great coal fields has been put at 200,000 square miles—about twice the area of France and more than seventy times the aggregate extent of all the coal fields of Britain. Of the quality of the deposits much has yet to be learned, but the distinguished German geologist, Baron von Richtofen, reported many years ago that the anthracite and the bituminous varieties were equal to the best produced in Europe. It is expected that very soon Chinese coal will be delivered at far eastern ports at prices with which no other coal can possibly compete, and that China in consequence of this development will become a large exporter of iron.

Mammoth Gates for the Panama Canal.

There will be forty-six locks or sets of gates in the entire Panama Canal. Each lock will consist of two gates or leaves, hung from the sides of the canal, meeting snugly in the centre of the canal when closed. Each leaf will weigh about 600 tons, and will be 65 feet wide by 77 feet high and 7 feet thick. They will, of course, not be solid, but will be diaphragm work and have air chambers to assist in lightening the leaf. There will be 92 of these leaves, each to be composed of 18 plates or girders, with diaphragm work, all to be covered with steel sheathing, 7-16 inches thick at the top, gradually thickening until it reaches 13-16 inch at the bottom. Hanging these gates will be quite a feat. They will be set in a pintle at the bottom, and held by a yoke of massive design at the top. There will be twenty of these sets of gates at Gatun, twelve more sets at Pedro Miguel, and the remainder, fourteen, at Miraflores. About one-half of one of the shops at Rankin will be given over to the fabrication of the structural steel work of the Panama Canal.

The Mighty Amazon.

Only the mariner can tell the place where the Amazon really has its mouth, because the opening it has made on the eastern coast of South America is so wide that it extends over one hundred miles. A long distance before one comes to the mouth of the river, however, one is really sailing on the waters of the Amazon, because they force their way so far out into the ocean. They say that three hundred miles out at sea, off the mouth of the Amazon, you can hoist a bucketful of fresh water out of the ocean from the deck of a ship, such is the quantity of its water that flows from that gigantic basin. Long after you have entered the actual river, and have its banks to north and south of you, if you are in mid-stream you will still be out of sight of land, such is the breadth of the vast channel. The river stretches far into the ocean and far up the country. Take a map of South America and look out a place called Iquitos. It lies four-fifths of the way across the Continent from east to west. Yet from Iquitos there is a fortnightly service of ocean-going steamers to Europe which descend some three thousand miles of the river before they reach the sea.

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Intercolonial

The Rev. Father Roney, S.J., of Hawthorne, Victoria, passed through Sydney the other day on his way to Auckland, where he is to conduct the retreat of the clergy of the diocese.

The Rev. Father N. Cooney, who for the past year has been officiating in the Cowra parish, assisting the Rev. Father D. O'Kennedy, P.P., has been presented with a purse of 100 sovereigns by the parishioners.

The Hon. John Meagher, M.L.C., who has quite recovered from his recent accident in Ireland, was in London during the general elections. Early last month he left for Paris and Brussels to visit his grand-daughter, Miss Fileen Meagher, who is at school in Jette. Mr. Meagher will be back in Sydney towards the end of February.

His Eminence Cardinal Moran has convened a conference to discuss the education question in all its aspects, particularly in regard to secondary education. All the Bishops of the State have been invited to confer with his Eminence (says the *Catholic Press*), and there will also be present representatives of the clergy of the various dioceses of the State, and representatives of the religious teaching Orders. The gathering will be of the greatest importance, and the result of its deliberations will be anxiously awaited throughout Australasia.

The formal laying of the foundation stone of the new Cathedral in Armidale is to take place on Sunday, February 5. The preparatory work is already in an advanced state, and everything will be in readiness for what promises to be the most imposing spectacle ever witnessed in New England's capital. The official ceremony will be performed by his Eminence the Cardinal, and there will also be present most of the Bishops of New South Wales, some Bishops from Queensland, and numerous priests and laity from the diocese and its environs.

At St. Carthage's Cathedral, Lismore, on Sunday, January 1, his Lordship Bishop Carroll referred at some length to the proposal for the building of the tower of the Cathedral and the erection of the new peal of bells. 'The cathedral committee since our last meeting (said his Lordship) has decided to complete the tower to its full height of 86 feet, leaving the consideration of the spire for another generation. The peal of bells will thus be housed in its permanent abode, and will be heard to fullest advantage. The estimated cost of the tower and erection of the bells is £6100. To meet this outlay the Roll of Honor represents £1850; the bazaar to date (several amounts are yet to come), net profit £1400—other donations not included in the Roll of Honor, £135; presentations to the Bishop and handed over to the tower fund, £820, making a total of £4025; and leaving a balance of £1895 to be raised.

Outside the Porta del Popolo, on the Flaminian Way, about a mile from the city, the passer-by may hear the metallic sound constantly repeated of the marble-workers, carving figures or monuments (writes the Rome correspondent of the *Dublin Freeman*). Here, within a rude building, all white with marble dust, the visitor may see the recently completed altar destined for the Cathedral of Sydney, Australia, ordered by his Eminence Cardinal Moran. It is an exquisite piece of work, consisting of an altar-table, supported on eight coupled columns, and a magnificent reredos, the whole structure rising to the height of 24 feet. The style, which has evidently been chosen to harmonise with that of the Cathedral, seems to be the Decorated with a feeling of the Perpendicular, which prevailed in the latter half of the 14th century.

A representative of the *Sydney Daily Telegraph* had an interview with his Eminence Cardinal Moran with respect to the education question in New South Wales. 'I have had no communication with any of the members of the Government (said his Eminence), and what some of the daily papers are pleased to style an ultimatum is a mere invention of one writer's own phantasy. In a recent interview I stated what were my ideas on the education question, and that so far as the present Minister's schemes came before us they were such as we could not cordially approve of. We hope now that Ministers will fully consider the matter, and, realising that a great injustice will be done to the Roman Catholic schools if they persevere in the present schemes as set out in the press, they will not be in a hurry to begin them. For instance, let us take the matter of bursaries and scholarships as being one of the greatest importance to our primary and secondary schools. Our idea is that such bursaries should be multiplied. We are entirely in agreement with Ministers that the increased bursaries should be open to all. Merit should be the only test. In the present scheme of reserving one set of bursaries and scholarships for the public schools and assigning a different set to the private schools, there seems to be an implied consciousness of the inferiority of the public schools. They seem to fear that if all these prizes were awarded for merit alone the private schools would carry them away. Surely if the public school system is all that it is claimed for it, those behind it should stand to their guns, and have a fair field of competition as between all schools. This is only a just demand. Quality, too, should be the standard of those who control the destinies of the children in the matter of education.'