

Science Siftings

By 'VOLT.'

Protecting Iron Works.

Two German chemists, Liebreich and Spitzer, have found from tests that a single application of paint is more efficient for the protection of iron against rust than are several coats. The explanation they offer for this somewhat surprising observation, is that a single coat is more elastic and less liable to scaling or cracking than a double coat, and thus affords more satisfactory protection from atmospheric influences.

Loss of Life in Mines.

In a report, Dr. Joseph A. Holmes, director of the United States Bureau of Mines, fixes the toll of one miner's life on each 183,000 tons of coal unearthed. These figures are for the year 1911. As compared with those of the preceding years a marked decrease is noted and this is attributed to the federal government's work in the mining field. It is also stated that the death rate in metal mines of the country is nearly as high as the above, averaging more than three men per thousand employed. The report strongly advises that the health conditions in and about mines be investigated, as preliminary inquiries have shown the prevalence of tuberculosis and the present of the hookworm disease in several different localities of the States.

Vertebrate Animals.

The contrast between the first two great divisions of the vertebrate animals—mammals and birds—is almost startling from its suddenness. There are no connecting links between them, and it is utterly impossible to mistake the one for the other. Yet, the same materials are employed in the structure of both. The skeleton of birds is made of hard bone, as in the mammalia; the respiration is carried on by means of lungs; the heart is divided into four parts, each with its set of valves; and the exterior of the body is covered with horny matter that is secreted from the skin. But the skeleton, lungs, and clothing of the birds are utterly distinct from those of the mammalia; and the outward and visible differences are so boldly marked that even a baby can discern them.

Send Messages Fifty Miles.

Mr. Eugene Reinhard, of the Australasian Wireless Company, has just completed the erection of the high-power station at Awanui, near the North Cape, a station which will be able to communicate with Sydney during the daytime and a much longer distance at night-time. Mr. Reinhard, while on a visit to Wellington, will give demonstrations to the officials of the Postal and Defence Departments of the portable field wireless set, which is capable of sending messages for a distance of 50 miles. The power for driving the dynamo is obtained with a bicycle attachment, worked by a man precisely as if he were riding a cycle. The whole outfit can be carried by three pack horses. The set includes small telescoped steel pipe masts, which support the aerials.

Wireless Telegraphy.

Some remarkable long-distance wireless telegraphy was accomplished by the Marconi operator on the Shaw, Savill and Albion steamer Pakeha on the voyage from Liverpool to Sydney and Auckland. The vessel was only out of communication with the outside world for two days during the whole voyage, and as she was carrying over 1090 immigrants to Sydney they were kept posted with news almost daily. Crossing the Southern Ocean the Pakeha operator was in constant touch with the steamers Persic, Stobburg, and the Rangitire, while off Cape Maria van Diemen, messages were received from the New Zealand Shipping Company's liner Tongariro off the Bluff, and then distant over 1200 miles from the Pakeha. The steamer Fiona, bound from Sydney to Suva, was easily picked up at a distance of 330 miles in the daytime. Before reaching Capetown the Pakeha's operator dispatched and received messages with the land station there, at a distance of over 400 miles in daylight.

Intercolonial

Right Rev. Monsignor Brodie, of Auckland, who has been on a health trip to New South Wales (says the *Freeman's Journal*), is at present in Sydney. On Easter Sunday he assisted at the religious ceremonies in the Cathedral.

Mrs. Elizabeth Moore, who lives with her daughters in Fitzroy street, Milson's Point, North Sydney, celebrated her 100th birthday recently. Mrs. Moore, who was born near Dublin two years before the Battle of Waterloo, came to Sydney in 1840.

The Guild Hall, Armidale, was crowded on Tuesday evening, March 25, when the parishioners of St. Mary's Cathedral assembled to bid farewell to the Very Rev. Dean Tobin on the eve of his departure to Ireland and Rome. At the same time the Dean was made the recipient of a purse of 200 sovereigns and an illuminated address.

The Governor of Queensland, Sir William MacGregor, in his speech at the St. Patrick's Day banquet, dwelt on the domestic virtues of the Irish people. 'The average family in Ireland is eight,' he said, 'whilst the ordinary average, with wastage elsewhere, is four. The infantile mortality is hardly up to 1 per cent. in Ireland. In Australia it is 8, and in England 12.'

The Rev. John McInerney, S.J., who had been an invalid for some time, died at 'Loyola,' Greenwich, on Easter Saturday, aged 63 years. Deceased was a native of Kilrush, Co. Clare, Ireland, and came to Australia with his parents while still very young. He leaves one sister, who is a Presentation nun at Windsor Convent, near Melbourne; and two brothers, Dr. T. McInerney (Warden of the Melbourne University) and Major T. M. McInerney, C.M.G.

The *Freeman's Journal* reports the arrival in Sydney of the Right Rev. Abbot Erkenwald Egan, O.S.B., of the Abbey, Ramsgate, and the Rev. Canon Keatinge, of St. Augustine's, Tunbridge Wells. Both dignitaries are in poor health, and recuperation is the main purpose of their visit. Abbot Egan, who is a brother of Mrs. John Toohey ('Innisfail,' Wahroonga), graduated from St. Augustine's College, Ramsgate, and St. Ambrose's, Rome. After a rest in Sydney he will proceed on his return journey by way of America. Canon Keatinge, who is pastor of St. Augustine's, Tunbridge Wells, will leave for New Zealand at the end of the week, and will probably be joined by Abbot Egan, as both have semi-official impressions to gather in America.

His Grace the Archbishop of Sydney intended to be present at the welcome tendered to his Grace Archbishop Mannix on his arrival in Melbourne from Ireland. Owing, however, to the necessity of his presence for the Holy Week ceremonies and for the ordination ceremonies at the Cathedral on Easter Monday, it was deemed inadvisable for the Archbishop to undertake the fresh fatigue of a long journey by train to Melbourne. During the week his Grace Archbishop Kelly received the following telegram from his Grace the Archbishop of Melbourne:—'Would not advise severe journey. Writing. Plentitude of Paschal joys.' The Archbishop wired felicitous greeting to Dr. Mannix as follows: 'Clergy, people, and Archbishop of Sydney send greetings'—to which Archbishop Mannix replied: 'Heartfelt thanks for gracious message from Archbishop, clergy, and people of Sydney.'

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