

Science Siftings

BY VOLT

The Heat of the Sun.

There is one thing in connection with the heat of the sun that many people do not understand (says the *Chicago News*). Citing the well-known fact that the nearer we get to a fire the more we feel its heat, they ask why it is that we find the air so much colder on the top of a high mountain than on the plain below. On the plain the sun's rays pour down with an intensity that causes actual suffering, while on the mountain three miles nearer the source of heat there is perpetual snow. That apparent inconsistency is perfectly understood by those that have given even casual study to atmospheric phenomena, for it is in the earth's atmosphere that the cause may be found. The sun's rays impart little of their heat to the air. It is the surface of the earth that they warm, and their radiation from the surface warms the superincumbent air. It is a law of nature that all hot bodies throw off their heat into space. The earth throws off at night part of the heat that it receives from the sun during the day. It would throw it off with almost equal facility during the day if it were not for the atmospheric coat that surrounds it. That atmospheric coat may be compared to the glass roof of a hothouse—it permits the sun's heat to enter readily, but prevents it from escaping. We see, therefore, why in precisely the same latitude the heat on the plains may be so great as to parch the vegetation, while on the mountain top there may be snow and ice the whole year around. The air is so dense on the lower levels that free radiation of heat from the earth's surface is impossible. Therefore the lower levels are warm. But on the mountain top the air is not nearly so dense, and heat is thrown off into space almost as fast as it is received.

Isinglass and Gelatine.

The difference between isinglass and gelatine is mainly one of source and quality, isinglass being a very pure variety of fish gelatine. Originally isinglass was obtained from the sturgeon only, and consisted of the dried air bladder of that fish. This is still the source of the finest qualities, which come from Russia, but it is also obtained from the sounds of other fishes. Isinglass is largely used for clarifying liquors, its chief value in this respect being due to its fibrous structure, the crossing threads forming a fine network in the liquid, which mechanically carries down all the minute particles that render the liquor cloudy and turbid. Gelatine, which generally occurs in thin, elastic, brittle plates, is obtained from bones, skin, tendons, horns, hoofs, etc., by boiling in water. On cooling, the solution gelatinises, or forms a jelly, which, when dried, becomes gelatine, size, or glue, according to the source from which it is derived. The best gelatine for dietic purposes is obtained from calves' heads and feet, but it is not desirable to inquire too closely into the source of what we find at table.

World's Largest Bridge.

The Pennsylvania Railroad has filed plans for building the largest bridge in the world. It will connect the mainland of New York with Long Island, and, with its approaches, will be three miles long. The greatest span over Hell Gate Channel will be 1000 feet long. The bridge will be 140 feet over the water, permitting the passage of the biggest vessels. The entire structure, except the piers for the arch, will be of steel, having an estimated weight of 80,000 tons. It will have four tracks—two for passenger trains and two for freights—and is designed for live loads on each of the tracks of two 190-ton locomotives, followed by a uniform load of 5000lb per lineal foot. The estimated cost is between £3,000,000 and £4,000,000.

Thunderstorms and Milk.

It is well known that milk often turns sour during a thunderstorm, and various reasons have been assigned (says the *Chicago News*). One of the reasons is that lightning causes the gases of the air to combine and produce nitric acid, and that some of this acid mixes with the milk, thus souring it. But the most probable reason is that the souring is due to the growth of a fungus in the milk which forms at other times than during a storm, but more freely then because the atmospheric conditions favor it. Scientists have investigated this matter, and they say that milk will seldom turn sour if the cows are given the right kind of food and the milk vessels are kept perfectly clean.

'Catholic Marriages.' The book of the hour. Single copies, 1s posted; 12 copies and over, 8d each, purchaser to pay carriage. Apply Manager, 'Tablet,' Dunedin.

Intercolonial

Sister Mary Genevieve Varley died at Star of the Sea Convent, Elsternwick, on April 25. She was a native of County Galway, Ireland, and had been a nun 15 years.

Madame Melba has accepted the invitation of the Sisters of the Good Shepherd to visit their Abbotsford Convent on her return to Melbourne.

A cable message has been received by the Rev. J. Shiel, administrator of St. Patrick's Cathedral, Ballarat, stating that his Lordship the Bishop of Ballarat is returning to Victoria by the Ortona, and would arrive in Ballarat on June 8. It is understood that he will be accompanied by the Archbishop of Melbourne.

Lieutenant Shackleton, of Antarctic fame, was a guest of his Eminence the Cardinal at the Palace, Manly, one evening recently (says the *Freeman's Journal*). In his time Lieutenant Shackleton met many distinguished men, but he says the bright recollections of his visit to Manly will not fade from his memory for many a year.

The Rev. G. A. Robinson, B.A., Camberwell, Melbourne, is in receipt of a letter from a prominent London musician in regard to the success on the concert platform of Miss Amy Castles. The writer says he has followed the career of Miss Castles from her first appearance in London, and that 'her voice is of surpassing power, bright and rich in quality, ample in range, and employed with true artistic instinct.'

The Right Rev. Dr. Duhig, Bishop of Rockhampton, at the close of the annual retreat of the clergy held at Meteor Park, received an address and testimonial from the priests of his diocese, previous to his departure for the Eternal City. Father Gallagher was the spokesman, and voiced the love and affection of the priests and people of the Diocese of Rockhampton towards the Bishop. His Lordship will also receive a valedictory address from the citizens of Rockhampton.

At a recent meeting of the general committee charged with preparing a reception to his Grace the Archbishop of Melbourne a letter was read from the Very Rev. Dean Phelan, V.G., in which it was stated that his Grace had expressed the wish that he might be allowed to return as quietly as possible. He laid down two requests—(a) that there be no presentation whatsoever; (b) that there be no procession. A deputation was appointed from the meeting to interview the Vicar-General in order to decide on what form the reception of his Grace shall take.

The Rev. J. J. Bannon, O.P., and the Rev. G. O'Farrell, O.P., of North Adelaide, opened a two-weeks' mission towards the close of April in Cairns, the seat of the Vicariate of North Queensland. The mission (as we learn from a Queensland correspondent) was an unqualified success, the attendances at the Masses and evening devotions taxing the holding capacity of the Cathedral. The sermons of the zealous and devoted missionaries were of a high order of merit, and made a great impression on those who heard them. The missionaries intend to visit all the centres of population in the vast Vicariate, and will be kept busy at their work until the end of July.

The Rev. Father MacDonnell, C.S.S.R., one of the bright and zealous band of Redemptorists of Mount St. Alphonsus' Monastery, Waratah, died in St. Vincent's Hospital, Sydney, on Saturday, May 1, after having undergone a very serious operation. Father MacDonnell (says the *Freeman's Journal*) had been suffering from an internal complaint for some considerable time, and despite great suffering carried on missionary work in West Australia and Victoria. Father MacDonnell was a native of Lime- rick, Ireland, and was born on November 16, 1867. He was professed in 1887, and ordained a priest in 1892. Six years later he arrived in Australia, where he labored with zeal in a fruitful spiritual mission.

Speaking at the banquet in connection with the opening of the new wing of Mount Erin Convent, Wagga Wagga, on Sunday, May 1, Bishop Gallagher said Catholicism was the very antithesis of secularism, for Catholics held that unless religion was based on God's teaching it had no value whatever. In this they had the command of God Himself, Who taught the little children, for did He not say, 'Suffer little children to come unto Me.' The evils of secularism were to be found in France, which was already on the down-grade, and the opposite effect could be seen in Germany, where four hours every week were devoted to directing the school children in either the Catholic or Lutheran religion. That was the difference between the two nations. France was a decaying one, and Germany a rising one, that could afford to build Dreadnoughts as she was doing.

DEAR ME!

Forgotten that SYMINGTON'S COFFEE ESSENCE! Whatever shall I do? Call at the nearest Store and ask. They all keep it.