

Science Siftings

By 'Volt'

The British Museum.

According to some interesting statistics of the library of the British Museum, the number of books which it contains is 1,750,000, not counting single sheets or parts of works that are accumulating. The shelving of the library exceeds 69 miles in length.

Why Leaves Turn Brown.

The green matter in the tissues of a leaf is composed of two colors, red and blue. When the sap ceases to flow in the autumn the natural growth of the tree is retarded, and oxidation of the tissues takes place. Under certain conditions the green of the leaf changes to red. Under different aspects it takes a yellow or brown hue. The difference in color is due to the difference in combinations of the original constituents of the green tissues and to the varying conditions of climate, exposure and soil. Maples and oaks have the brightest color.

Oceans Below Us.

So enormous is the quantity of the water contained below the surface of the earth that if it should be poured out upon the land it would cover it to a uniform depth of about 4000 feet, is the remarkable assertion of a geologist. Below a depth of about six miles it is believed that no water can exist in the rocks, because the tremendous pressure probably closes all pores, but above that level the amount of underground water is estimated to be equal in quantity to one-third of all the water contained in all the oceans.

No Sunset for Five Days.

At the head of the Gulf of Bothnia there is a mountain on the summit of which the sun shines perpetually during the five days of June 19, 20, 21, 22, and 23. Every six hours during this season of continual sunshine a steamer leaves Stockholm crowded with visitors anxious to witness the phenomenon. At the same place during winter the sun disappears and is not seen for weeks. Then it comes in sight again for 10, 15 or 20 minutes, gradually lengthening its stay until finally it stays in sight continually for upward of 120 hours.

The Height of a Mountain.

The barometer is the instrument by which the weight of the atmosphere is determined. But how many of you know that this instrument may also be used to determine the height of a mountain? It has been found that the column of mercury in the barometer falls about one inch to every increase of 1000 feet in altitude, because the higher we ascend the lighter is the atmosphere and the less, therefore, the pressure on the mercury in the reservoir of the instrument. If the barometer marks thirty inches, then, at sea level and twenty-seven inches on top of a mountain, it follows that the mountain is 3000 feet in height approximately.

How we Got Thermometers.

It is believed that Galileo made the first thermometer about the year 1595. It was an instrument of glass, consisting of a bulb from which the slender tube depended, open at its lower end, and there plunged into a vase containing some colored liquid, such as vinegar or wine. The glass bulb was heated before the stem was immersed, and when the contained air cooled and contracted the fluid in the upright thermoscopic tube rose to a higher level. This simple and primitive apparatus is constantly made use of on the lecture table nowadays, when some simple demonstration of the laws of heat is to be made.

Acetylene Gas.

Acetylene gas is now used as an explosive. By means of an air mixture a force is obtained from it which can compete with that of powder and dynamite. Carbide of calcium is reduced to small particles and put into a tin box. In this the carbide lies at the bottom and above it is a portion filled with water. After the drill hole has been completed the cartridge is placed in it, and the hole is closed with a wooden stopper. Then the partition is perforated by a blow from a pin and the water comes in contact with the carbide, whereby acetylene gas is generated. This mixes with the air of the drill hole. After five minutes the gas is ignited by an electric spark.

Intercolonial

The marriage rate in Victoria was last year the highest for sixteen years. The rate of increase in births has been the highest since 1901. The death rate for the year was lower than the average for the previous five years.

The high regard which Colonel Freehill has earned by his sterling qualities was manifested when the news of his projected departure, with Mrs. Freehill, for an extended tour became known in Sydney. Many representative functions were held in the city to bid them bon voyage, and complimentary speeches were conspicuous features.

The Rev. P. J. Fitzgerald, who labored in Fitzroy, Geelong, Heidelberg, and other suburban parishes of the Archdiocese of Melbourne for some years, has been recalled to his native diocese. He was entertained at a dinner given by the clergy at the Hotel Victoria, South Melbourne, the Rev. Dr. Kelly presiding. Prior to his departure a presentation of 80 sovereigns was made to Father Fitzgerald by some friends.

A few Sundays ago the Right Rev. Dr. Gallagher, Bishop of Goulburn, assisted by the Right Rev. Dr. Dwyer, Coadjutor-Bishop of Maitland, blessed and laid the foundation stone of a new church at Temora. At the conclusion of the day's ceremonies the pastor of the district, Rev. E. J. Fallon, was able to announce that the total subscriptions received on the occasion exceeded £2000.

The Very Rev. Father Meyer, the General of the Missionaries of the Sacred Heart, is the guest of the Sacred Heart Fathers, Kensington (says the Freeman's Journal). The Right Rev. Dr. De Boismenu, Coadjutor-Bishop of British New Guinea; Very Rev. A. England, Vicar-Apostolic Marshall Islands; Right Rev. Dr. Coupe, Vicar-Apostolic of New Pomerania; and the Right Rev. Dr. Leray, Vicar-Apostolic of the Gilbert Islands, met Father Meyer, and held a convention regarding the Islands missions.

His Grace the Archbishop of Melbourne presided at a meeting of the Bishops of the Province, held early in March at the Archiepiscopal Palace. The prelates who took part in the meeting were—His Lordship the Bishop of Sandhurst (Most Rev. Dr. Reville, O.S.A.), his Lordship the Bishop of Ballarat (Most Rev. Dr. Higgins), his Lordship the Bishop of Sale (Most Rev. Dr. Corbett). The deliberations of the prelates had to do with the further development of the Catholic Central Training College, Albert Park, and consideration of the new relations which have sprung up between the Registration Board and the Catholic primary schools of Victoria.

The following clerical changes have been made in the Archdiocese of Sydney:—Rev. R. Condon, from Cooma to the Sacred Heart Church, Darlinghurst; Rev. D. Conaghan, from the Sacred Heart Church, Darlinghurst, to Cooma; Rev. Father McDonald, who is doing temporary duty at St. Benedict's Church, to the Sacred Heart Church, Mosman; Rev. Father O'Regan, from the Sacred Heart Church, Mosman, to Moruya; Rev. J. Kelly, from Moruya to St. Joseph's Church, Newtown; Rev. J. M. Kelly, from Subiaco to St. Patrick's College, Manly; Rev. Father Bradley, who is at present doing duty at St. Joseph's Church, Newtown, intends to take a few weeks' holiday prior to proceeding to Manila (Philippine Islands) for missionary work. The Rev. M. A. Flemming, who had charge of St. Joseph's Church, Newtown, during Dean Slattery's absence, has returned to St. Benedict's Church.

Brisbane records the success of the Christian Brothers' pupils at the recent Public Service Examination. Thirty vacancies were competed for, five being allotted to girls and 25 to boys. Of the 25 places, 15 were won by Christian Brothers' boys, who thus attained sixty per cent. of the total vacancies open to boys. When it is remembered that Catholics number less than 25 per cent. of the total population, these successes cannot be characterised as other than extraordinary. Out of the first 16 candidates, 14 are Christian Brothers' pupils. From the first to the ninth included is a clear run for the Brothers' boys; the tenth place is held by a stranger, and again another sweep on to the 15th place. At this stage of the game the play stands: Christian Brothers, 14 candidates, Grammar and other schools, two candidates. From the 15th to the end of the list there is only one Christian Brothers' boy; this fact alone indicated clearly the quality of their work.