Dr. T. P. Hayes, on behalf of the Rev. Mother, thanked Colonel Vyvyan for coming to make the presentation. He paid eloquent testimony to the good work achieved by the Mafeking Sisters, and wound up by saying all would appreciate this recognition of their devotedness and usefulness. Cheers were then given for Colonel Vyvyan, after which the company dispersed.

Jesuit Scientists in Manila.

It would be very hard to properly define a Jesuit according to the popular non-Catholic conception. According to many the object of his existence is to make mankind subservient to him, not as we always find him rendering immense services to humanity in the mission field, in the domain of literature, and in the scientific world The Order has been established for many years in the Philippines, where apparently it had, under Spanish rule, a wide field for putting into practice those attributes with which it is credited by its maligners. Yet in that out-of-the-way part of the world it has been engaged in the cultivation of science—especially astronomy and meteorology—and conducting one of the finest observatories in the world. A writer in the San Francisco *Monitor* paid a visit recently to the Manila Observatory, of which he gives the following account :—

On entering the gateway a black-robed priest greets you pleasantly, ushers you to an upper office and introduces you to a genial smiling man, also wearing the robe of his Order. This is the famous Father Algue, one of the most noted astronomers and meteorologists in the world, admired by scientists of every government. So far is his word taken as law, that during the late war, when Dewey cut the cable, the Chinese and Japanese ship owners would not allow their vessels to put to sea until communication in regard to the existence of typhoons could be had from him.

Ascending to the roof of the meteorological building, you stand amid a cluster of wind vanes that, connected with instruments in a room below, register the time, direction, and velocity of the slightest zephyr ; another machine causes the sun to register his passage by burning his course on a paper beneath, and, should a cloud intervene, an unmolested gap connects the charred track of the periods of sunshine, marking the time to a second ; yawning hoppers catch the rain and register the fall in time and inches ; delicate bulbs register the amount of evaporation that has transpired ; and numerous other instruments advise on all the traits of the elements.

Paramount to all, however, is the complicated system connected with the delicate mechanism of

The Noted Universal Meteorgraph,

invented by Father Secci, one of this famous Jesuit fraternity. This is a marvellous instrument, and one of the wonders of the scientific world.

It registers, every half minute for a week, the movement of the wind in regard to direction and velocity, the deviation and fall of the rain, the state of the barometer and thermometer, and the amount of moisture carried in the air. There are a number of instruments in the bureau for the same separate purposes and requiring hourly attention, but this wonderful piece of mechanism, by day and night, in sunshine and rain, calm or storm, keeps up its clockwork movement and its slender wire fingers trace indelibly on duplicate sheets of cardboard all the variations of the elements, with no need of attention save the weekly winding and change of cards.

The huge time ball is another centre of attraction. Its method of operation is systematised to a nicety. Five minutes before noon three of the assistants station themselves in the observer's room at the mechanism connected with the ball on the tower above. The ball itself is about four feet in diameter and is dropped from the top of a pole about 40 feet in height by means of a lever operated by one of the assistants who, with eyes on the chronometer, awaits the exact moment. Another stands ready to press the electric button that fires a gun at Fort Santiago, near the mouth of the Pasig, two miles away. The third stands at the window, glass in hand, and watches for the flash of the gun, to report any failure in the discharge. But it is in regard to

The Dread Typhoon

that the word of Father Algue is most respected, and many a ship and steamer that now plies the sea owes the continuance of its vocation to the priests in the observatory. Scattered along the coast of the islands, from furthest north to the extreme south, are systems of sub-stations connected with the observatory. A typhoon forms in the Caroline Islands, hundreds of miles to the south, and swings its relentless course towards the Philippines. The alert southern observer signals the approach and all other stations take up the word. Nearer and nearer comes the dread scourge of the seas, but still hundreds of miles from Manila.

On the observatory roof stand Father Algue and his brother priests figuring from the reports the course of the destroyer. They decide that it will pass near Manila. The wires hum the intelligence and on hundreds of ships all is confusion. Steam is raised, sails are set, the small craft run up the Pasig for shelter, and officers and crews stand waiting further intelligence. Still there is not a ripple on Manila Bay ; no cloud mars the peaceful blue of the sky ; and nothing disturbs the lazy tropical day.

The Jesuits group in closer conference and again the word is flashed, this time that Manila will be in the vortex of the storm. Instantly the sails swell out on the ships ; the water is churned by the propellers of the steamers ; and the bay is dotted with a frantic fleet scurrying for safe anchorage at Cavite.

Finally all is again calm. The fleet rides peacefully in its new position, and naught remains of the confusion of an hour before. The sun still beats relentlessly on a sea of glass.

Suddenly, out of a clear sky, bursts the awful fury of the typhoon. The heavens are darkened and the peaceful bay trembles with the fury of the waves ; the wind howls along the shore, uprooting tree after tree in its terrible course ; and the thunder and lightning lend awful accompaniment to the shriek of the storm. The wrath of the elements is wasted. Thanks to the timely warning of the priests, the shipping rides easily at safe anchorage.

The system of

Recording Earthquakes

is another marvel of science. A huge granite shaft extends from deep down in the volcanic rock to the top of the building, yet entirely free from any contact with the floors. Affixed to its sides are delicate instruments that record the slightest tremor of the earth. One of these dainty mechanisms, on the approach of an earthquake, rings a warning bell in the observer's room and indicates the direction from which the shock is to be expected. This instrument is the invention of Father Sanderia.

So familiar are the priests with the volcanic centres of the islands that they can tell exactly the spot from which the tremor starts, and by listening through a receiver let down into the earth, re-enforced by a sound magnifier, the rumblings of volcanic disturbances can be detected and notice given of the approach of an earthquake. Another of these wonderful instruments is so delicately set that it records the tremor of the earth caused by the beating of storm waves on Norther Luzon, 300 miles distant.

Crossing from the meteorological building, the observatory proper furnishes food for wonderment. Here are manufactured the famous typhoon barometers, the invention of Father Algue. Busy natives print and lithograph the maps of the bureau bulletins in a room equipped for that purpose ; assistant observers take observations on solar machines of all descriptions ; and high in the dome swings the huge twenty-inch telescope, obedient to the slightest touch. This instrument weighs three tons and the dome through which it peers, about 20 tons, yet so delicately is each balanced that a slight turn of a wheel moves both heavy masses at the will of the operator. Observations are regularly taken and the telescope has been a prominent factor in the astronomical world.

In a separate building the magnetic department holds sway, and all the magnetic vibrations of the earth, electrical and atmospheric storms, are carefully recorded.

The garden is another source of attraction. Four hundred varieties of tropical plants and fruits are nourished and tended by Father Solar, who combines botany with meteorology. The collection embraces oranges, cinnamon, tamarind, mango, bread fruit, banana, bamboo, betel nut, fig and every other variety of fruit bearing trees.

And thus labor from year to year the fraternity of Jesuits ; day by day they are at their posts working ceaselessly for the welfare of science. Month after month they faithfully serve the nation that reposes the utmost confidence in their knowledge. Year in and out witnesses the untiring efforts of the noble Father Algue and his assistants, men who are great among fellowmen ; who are an honor to the country in whose interests they labor ; and who are an enduring credit to the great Church of which they are the most humble disciples.

Are Strikes Lawful ?

Mgr. Bonomelli, Bishop of Cremona, has recently issued some important instructions to his clergy on the labor question in Italy. The document, weighty in itself, has attracted universal attention on account of the personality of its venerable author, who is one of the most prominent members of the Italian episcopate. In his circular on the labor question, of which the Rome correspondent of the *Tablet* gives a summary, he writes mainly about strikes and the conditions under which they are lawful.

'Is a strike lawful?' the Bishop asks, and he answers in the affirmative. The workman's labor is his own, even more than the house, or field, or produce is the property of the master. As the master may refuse to sell at a certain price, or under certain conditions, so may the workman too. And what one workman may do a thousand can do together. But if the workman has already undertaken to labor either in the factory or in the fields for a definite period of time, he cannot strike work before that time has expired without committing an act of injustice, and he is responsible to his master for the consequent damages. 'Yet many of you workmen whom I now wish particularly to address,' says the Bishop, 'have struck work when you were already bound by previous contracts made and accepted. You have done ill ; you have acted unjustly. But you will say to me, "The contracts were too onerous and unjust, we were constrained to make them, and, therefore, we had the right to break them."'

The Bishop allows their right to break them if they were unjust in the first instance. But he points out that nobody is a judge of his own case, and they should have had recourse to prudent men of influence, to the parish priests, or syndics, or magistrates, who would see that justice was done them. Even when the injustice is patent, and their right to strike incontestable, he recommends them strongly to try every means of mediation before striking. Strike is the last arm of defence ; it is war, and, like war, it brings danger and loss in its train Families have to suffer while the strike continues, and the rise in wages rarely compensates for the preceding loss.

He inveighs against many forms of unjust treatment that are found in his own diocese and against the prevalent absenteeism. 'It is folly,' the circular concludes, 'to think that the actual labor movement can be checked by force. For the force is in the people, who know the power of their numbers in voting and in the efficacy of organisation. It is an illusion to suppose that armies can restrain the proletariate, which is an army in itself and furnishes the army of the nation with its recruits. No other remedy remains but the spirit of the Gospel and that equality of charity which may be transfused into the most varied forms of labor that meets with a just retribution.'

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