

## Science Siftings

By 'VOLT.'

### Firing Four-Bladed Knives.

One of the best defences against the attack of modern infantry has proved to be wire entanglements, thousands of miles of which guard the fronts of opposing armies in the present war. Whenever a good defence is found, however, then human brains set to work to find some means of overcoming it. So well made and so intricate have been the entanglements, however, that the highest explosives have sometimes failed to clear a way, and the French have hit on an invention. This is a gun which fires a special heavy four-bladed knife. The knife revolves rapidly when fired, and cuts a way through the strongest entanglements, so opening a way for a bayonet charge. It has the great advantage over all other methods that it does not involve any risk to the soldiers, who formerly had to place the explosive bombs beneath the wire, with every chance of being shot while doing so.

### The Age of Trees.

Inquiries as to the general age of trees have shown that the pine tree sometimes attains 700 years as a maximum length of life; 425 years is placed as the allotted span of the silver fir; the larch lives, as a rule, about 275 years, the red beech 245, the aspen 210, the birch 200, the ash 170, the elder 145, the elm 130. The heart of the oak begins to rot at about the age of 300 years. Of the holly, it is said that there is a specimen 410 years old, near Aschaffenburg, Germany. A count of the annular rings in a gigantic Californian redwood tree felled, shows that it began to grow in 550 A.D., 1366 years ago. It had reached a height of 350 feet, and a circumference of 90 feet at the base.

### Spider Silk.

The silkworm is by no means the only creature that produces silk. Spiders make their webs, nests, and egg-cocoons of a kind of silk that is well adapted for certain of man's uses. The filaments of spider-silk are much finer than those produced by the silkworm, but they are relatively stronger. The webs of some of the large spiders of tropical countries are strong enough to entangle small birds. In the seventeenth century, travellers in Paraguay found that the natives made clothing from the webs of a species of Epeira, the genus to which the common garden spider belongs. Spider-silk has been used for centuries in China, India, and West Africa; notably in the Chinese province of Yunnan, where the so-called 'silk of the Eastern Sea' is produced. In the year 1708 a French jurist, Monsieur Guenau, of Montpellier, succeeded in making several pairs of gloves and stockings from the silk of garden spiders. The first really practical experiments, however, were made by an Englishman named Rolt. By his process he drew the silk directly from the body of the spider; and the material he obtained was much stronger than that spun under normal conditions. The end of the filament he attached to a bobbin, which was revolved by steam. The process does not seem to incommode the spider. After she has been robbed of all her silk, she rests for ten days, and is then ready to yield another supply. As the silk comes from the spinnerets it is covered with a viscous substance, which is washed off in running water. The filaments are very fine; from eight to twenty-four must be combined to form a single thread. The fabric that these threads produce is much lighter than ordinary silk. For that reason, cords of spider-silk are especially suitable for the nets that enclose balloons. At present the most promising experiments in the production of spider-silk are carried on in Madagascar. They use a large spider called the halabe. At the school in Tananarivo they pay the natives a few pence a hundred for the spiders, each of which yields a filament from 1000 to 1300 feet long. The silk is of a superb glossy yellow, but its color is not permanent.

## Intercolonial

After labouring successfully for 13 years in Australia, Brother T. J. Murphy, of the Christian Brothers, Lewisham, has been recalled to Dublin, Ireland. During his sojourn in Australia he made for himself many friends.

The Very Rev. Father Ryan, S.J. (Provincial), received word recently of the death of the Rev. Oliver Daly, S.J., who passed away in Ireland at the age of 72 years. Some score of years ago, the deceased priest gave missions in various parts of Victoria, the other States, and New Zealand. He was an effective preacher, and his labors were most fruitful.

The popularity of the new Lord Mayor of Sydney (Ald. R. D. Meagher) has been evidenced by the thousands of congratulatory sent from all sections of the community, while far-away prominent politicians and representative public men of the other States also forwarded messages of warm regard (says the *Freeman's Journal*). Included among the callers were his Grace the Most Rev. Dr. Kelly (Archbishop of Sydney), members of the District Board of the Hibernian Society, a number of the clergy, and many members of the State and Federal Houses.

Rev. Father Fahey, who has been in the Blue Hospital, Malta, recently wrote from that institution to Archbishop Clune, of West Australia: 'When the campaign started in Turkey, the Blue Sisters placed their hospital at the disposal of the War Office. Hundreds of officers have been through here, and they all speak most highly of the way they have been treated by the Sisters. The majority, of course, were Protestants, but they have all gone away converted from the non-Catholic to the Catholic view of convents and nuns.' The Malta Hospital was built by Mother Xavier, now of Lewisham Hospital, Sydney.

We cannot pass by without remark the devotion of our old boys to their religion (says *Our Alma Mater* of St. Ignatius College, Riverview, Sydney). A striking instance comes to mind. On the voyage from Australia to Egypt, we know that on at least three transports old Riverview officers and men conducted church parade on Sundays. One officer, since killed in action, Captain Barlow, actually had a congregation of 500 to 600 at each service. Four others on another transport were not content with Sunday services alone; they must needs have one every night: the Rosary and—never forgotten—the 'Hail, Queen of Heaven.' On yet another transport an O.R. officer preached each Sunday to the Catholic soldiers.

The heroism and zeal of the Rev. Father J. Fahey (Western Australia), chaplain to the Expeditionary Forces, has moved the Imperial authorities to award to the devoted priest the Distinguished Service Order (says the *Freeman's Journal*). Father Fahey has sent to his Grace Archbishop Clune, of Perth, several communications giving graphic details of the life and dangers in the trenches, but modestly omitted all reference to any of his own acts of devotion. Particulars of these became known from other sources. We know that the zealous chaplain landed with a covering party at Gallipoli, and spent many months ministering to the wounded and dying in the danger zone. He was finally wounded and conveyed to Malta, and subsequently was sent as a convalescent to London. Father Fahey spoke very highly of the glorious work of his fellow-priests, many of whom have been wounded on the heights of Gallipoli. Rumors were circulated and published that Father Fahey had won the V.C. for leading the soldiers in a charge after all the officers had been killed, and high tributes were paid to his bravery, etc. As a matter of fact, according to his own words, Father Fahey was too busy consoling the dying to think about rushing any of the heights at Gallipoli.