

Paragrams.

The Waihi Grand Junction Gold Mining Company at Waihi has expended £160,000 upon its property, and has not yet received any return.

It is proposed to construct a 3 ft. 6 in. gauge railway in West Australia from Port Hedland to Nulligane. The work will probably be undertaken by the West Australian Government.

The traffic returns for the 37 principal British railway companies for the year 1905 show the goods receipts to reach a total of £54,131,000, which is an increase of £685,000 over the year 1904.

A muzzle velocity at the rate of 3,410 ft. per second was obtained in a test of the 6 in. Brown wire gun at Sandy Hook on January 28th last. The projectile weighed 100 lb., the charge being 72½ lb. of smokeless powder.

During 1905 the Standard Oil Company declared dividends amounting to 40 per cent., and involving about £9,000,000. In 1904 the dividends totalled 36 per cent., against 44 per cent. in 1903, 45 per cent. in 1902, 48 per cent. in 1901 and 1900, and 33 per cent. in 1899.

Arrangements have been made for the use of the old Hamburg Station in Berlin, according to the *Frankfurter Zeitung* of January 24, for the purpose of a railway museum. It has with this view been entirely renovated and surrounded with a garden and plantations.

The engineering firms of Newcastle, N.S.W., are very busy at present, particularly with colliery and marine work. Several are making additions to their plants. In one case a large hydraulic riveting machine is being installed, also a 15-cwt. steam hammer. Another firm is putting in vats and dynamo for nickelling, brass-plating, and silver-plating work.

Recently Mr. T. Ballinger remarked that committees of the Wellington Industrial Association had been informed that colonial blankets were being imitated in England. Mr. W. Allan said that "no Scotch housewife would buy an English blanket if she could secure a colonial one. Quality for quality, the New Zealand blanket was cheaper than the English article."

The names have now been selected for the two new 25-knot Cunarders. That which Messrs. John Brown and Co., Limited are building at Clydebank is to be called *Lusitania*, after the old Roman province on the Iberian Peninsula. The sister ship, which is being built by Messrs. Swan, Hunter, and Wigham Richardson at Wallsend-on-Tyne, is to be called *Mauritania*, the old Roman name for Morocco.

Messrs. J. Chambers & Son, writing on the increasing demand for gas-producer plants, state that since the discovery of this method of generating power several unsuccessful efforts have been made to adapt suction machinery to local fuel, but Tangyes have seemingly overcome the initial difficulties, and now claim to be able to supply a plant capable of developing from ordinary gas coke 10 b.h.p. at a cost of a penny per hour.

It is proposed to drive a tunnel through the summits of the Alleghany Mountains, U.S.A., for the Pennsylvania Railway. Two routes are stated to be under survey, one involving a nine and the other an eleven mile tunnel. It is stated that, whilst the undertaking would equal the Simplon tunnel in magnitude, the rate of construction would be much more rapid, as the height of the mountains above would not be too great to prevent the driving of intermediate shafts.

The Spreckels sugar factory, reported to have been destroyed by earthquake, was the largest establishment of its kind in the world, its capacity being 3000 tons of beet sugar per day. The factory was at Salmas, 87 miles south of San Francisco, and covered about 500 acres. The equipment was most complete and up-to-date. The main building was nearly 200 yards long, 35 yards wide, and five stories high. The boiler-house was 560 feet long, and contained 48 boilers of 125 h.p. each. Two steel smoke stacks brick lined, reached

a height of 216 feet. The amount of water required to keep the mill running was said to be 13,000,000 gallons per day of 24 hours. This water was procured from the Salmas river, and from six 48-inch wells, which had a depth of 160 feet each. During a sugar-making campaign there was consumed each day of 24 hours 1200 barrels of oil. The plant cost nearly £500,000.

The *New Zealand Mines Record* states that a firm which manufactures patent power-producing gas plants applied to the High Commissioner in London for 4 lb. samples of New Zealand lignite, in order to have it analysed and reported upon as to its suitability for use in gas producers, stating that if found suitable for making producer gas it might result in considerable trade. Samples of lignite and brown coal have been procured by the Inspector of Mines from Otago and Southland, and have been forwarded to the High Commissioner.

We have two or three condensed milk factories in New Zealand, but notwithstanding that, considerable quantities are imported; at the same time a fair quantity of New Zealand milk is exported. It seems that there exists an excellent and probably an extensive market in the East which ought to be worth exploiting. According to a Rangoon paper, "the trade in preserved milk between Europe and Burmah is enormous. In every part of Upper Burmah and the Shore States canned milk is obtainable, and is used by the people as a confection. It comes from Switzerland and Norway, where the creameries go to the extent of printing labels and advertisements in Burmese."

Six new cars have been delivered to the Christchurch Tramway Board, by Boon & Co., to whom the manufacture of the bodies was entrusted. The vehicles are of new design. By lowering the body in the centre a low step is provided for entering and alighting, another low step inside the car taking the passenger to or from either of the end divisions. Each car provides accommodation for 44 passengers, and is said to be cheaper than any imported car of the same capacity. So satisfied is the board with the work that the same firm have been asked to supply as many more, being all that is required at the present time.

A syndicate has been formed in Nelson for the purpose of prospecting the flat country around Waimangaroa by boring, with a view to determining the depth of the coal seam in that locality. A lease of 1000 acres has been applied for, and approved by the Westport Harbour Board. The syndicate intends to sink two bores by means of the diamond drill—one near the coal outcrop, with the object of cutting the coal at a probable depth of 500 ft., and the second in the middle of the plain, where it is expected that coal may be found at a depth of not less and probably considerably more, than 1000 ft. Those comprising the syndicate are prepared to expend £1000 in boring, and anticipate being able to get down to a depth of 1500 ft.

The present would appear to be propitious for those British engineering manufacturers whose products can be sold in France, notwithstanding the duties levied on them. These are more numerous than they are thought to be, and with properly qualified residential agents to put forward such manufactures on the French market, adopting French business methods in doing so, and deviating when necessary from those conservative rules which British firms are so fain to apply when dealing with foreigners, the amount of British made machinery imported into France could be very materially increased, and many large orders which find their way to Germany and America—purely on account of the facilitating methods adopted by the manufacturers of these countries—could be secured to British industry.

"Important Industries of New Zealand" are dealt with in an illustrated article which appears in the *Exporters' and Importers' Journal*, printed in New York City, U.S.A. The industries dealt with are timber, kauri gum, and hemp, several pictures relating to all three being given. Other articles descriptive of New Zealand have already appeared in this paper, and these, the writer says, "have awakened remarkable interest among the trading part of the world's citizens." The three products referred to constitute fully one-tenth in value of the colony's exports. They "furnish the manufacturers of the colony with valuable raw material for their factories, and provide freight for numbers of vessels owned by Americans and other foreign people. The kauri gum and flax harvests have for many years proved a source of considerable wealth to New Zealand, as has also its abundance of fine timber, which, while

not figuring amongst its list of exports to the United States, is a very important item of trade with Australia, the South Sea Islands, and elsewhere."

The beneficial effect of improved technical education of this country within the last decade, looked at from a commercial or a national point of view, is not to be gainsaid. To deny it would be frivolous; to discuss it in its broadest aspect would be superfluous. As, however, mechanical engineering is divided into well-defined sections, it is of interest to members of those various sections to consider and review the particular bearing the question has upon themselves.

The foundry, as a unit, undoubtedly occupies a more respectable position to-day than it has ever done in the past, and the moulder has, consequently, an increasing right to review the matter from his own point of view.

According to the *Journal des Debats* for January 16, complaints have been made that for certain of the French railways, which are the property of the State, it has been customary to procure coal supplies from abroad, to the neglect of French industries and native collieries. It would seem from the figures given that out of a total consumption of 5,112,000 tons by the six chief railway companies in 1904, 1,613,700 tons were brought from foreign countries—a proportion of 35.56 per cent. It is pointed out that in the management of the railways the State is forced to act in the same way as a private firm might do, and to buy its materials in the cheapest markets. The French Government is itself a large buyer of foreign coal, and, out of a total of 248,000 tons required in 1904, it purchased no less than 198,300 abroad, being 79.76 per cent. of the whole quantity. It is shown further that the largest amount of coal not of French origin is bought by those railway companies whose lines are remote from the native coalfields.

A photograph can be taken of a single drop of drinking water, showing the movements within it of microbes with a diameter of less than one-two-hundred-thousandth part of an inch. Professor Exmer, of Vienna, took a photograph of the eye of a dead black beetle, and the camera revealed the image of the window before which he had placed it, as well as an "R" he had written on the pane, and a church spire in the distance. The action of the heart, the interior of the stomach, and the larynx can be, and are not only photographed, but thrown on a screen by cinematograph, showing the various movements. An expert, who writes in *Cassell's Saturday Journal*, has in his possession a photograph of his own hand, showing every bone in it, as well as a needle embedded in the flesh. Photography can show alike the motions of a falling rain-drop, and of bullets travelling through space at the rate of 1400 miles an hour by an electric spark extinct in one-millionth part of a second. During the flash of this spark a bullet leaving a magazine rifle at the rate of 3000 feet a second would be unable to cover a distance of more than one-four-hundredth part of an inch.

Colonel Sir Charles Euan-Smith, at the annual meeting of the Marconi Wireless Telegraph Company, Limited, gave an interesting *resumé* of the progress of Mr. Marconi's invention. In Germany the Marconi system "holds the field" upon the German liners; the Italian Government has not only embodied the Marconi system in the public telegraphic service of that country, but the Italian men-of-war and other vessels are equipped with the company's apparatus; the French liners, the ships of the American Trust, Dutch ships, Canadian ships—all these carry Marconi apparatus. In England His Majesty's Post Office is now in close alliance with them. The British Admiralty have adopted the apparatus for use throughout the entire navy. With these facts in view, with the knowledge of the contracts which have been entered into with foreign Governments, and with influential companies in many countries, the directors feel that, while by no means neglecting or wishing to depreciate the value of the criticisms that may be showered upon them, they can afford to await confidently the results to which they look forward in the near future as likely to provide ample compensation to the shareholders for their patience in waiting the full development of this gigantic enterprise.

We owe to Americans the telephone, the phonograph, photography in motion, and most of the recent developments in the direction of electricity. They are a people in a hurry. The Austrians, a kindly race, have contributed the X rays; from Italy, the land of imagination, has come the wireless telegraphy; and France, where life is, the discoverer of radium.