

of the "technicon" which Mr. J. Brotherhood shows in the exhibit of Messrs. Hointzman. The invention is as ingenious as it is simple, and well calculated to fulfil its mission of strengthening and developing the pianist's hand by a judicious schooling of the muscles of the fingers, wrist, and forearm.

## THE CANADIAN PACIFIC AND CALIFORNIA.

(Bradstreet's San Francisco Letter, September 3.)

THE opening of the Canadian Pacific Railroad has naturally attracted some attention in San Francisco, where it has even been viewed with alarm as another possible power for diverting the Pacific coast shipping trade from that port. The new line has in view the establishment of a fleet of steamers running to China and Japan, and another line to Australia via Honolulu. From present appearances the American railroad companies have the most to fear from the competition, as the Canadian line is taking California freight to Chicago and Missouri river points, via Port Moody and St. Paul, at 50c. a hundred pounds. At such rates there is no difficulty in obtaining freight, but it is problematical whether it will pay the company to offer such inducements to California shippers for any length of time. The immediate result may be a reduction on the part of the American lines, and a fight for supremacy, but if the latter win then the California shippers who now avail themselves of the cheap offerings will be made to suffer later on. The most probable outcome of the fight will be a permanent reduction in freights on our American lines.

It seems likely that the most important factor in the Canadian Pacific carrying trade will be the tea transportation from China and Japan. With connecting steamers on the Pacific and Atlantic, the greater proportion of the Suez route tea trade will be transferred to the Canadian route to supply the English market in addition to Canada's own requirements. But it is doubtful whether the New York market will be supplied via Canada. In two months and a half - from August 1 to November 15, 1885 - the Suez Canal tea traffic amounted to 24,000,000 pounds. But after the tea shipments are over there will not be a large amount of carrying trade from China or Japan to England. The greater volume of business would probably be in the other direction during a whole year, English manufactures being shipped to the Orient. The present rate of tea freight from Japan to New York via San Francisco is 2c. a pound, which leaves a good margin of profit, and the first and second shipments of new season's teas cost from 3c. to 5c. a pound for transportation. These figures will stand considerable cutting before running at a loss is involved, and the next season will see the early crop-teas delivered in New York at a much less cost than formerly. The establishment of frequent and direct communication between Canada and San Francisco will be the means of finding an outlet for many Californian agricultural products which are at present debarred from the northern market.

From competition in the Australian trade, San Francisco has nothing to fear at the hands of the Canadian Pacific. Seventy-five per cent. of this trade consists of exports from this country of American machinery, manufactures and products which will always be in demand and which cannot be obtained elsewhere. Our imports from Australia are limited in quantity and value, and are not likely to increase with our present tariff. The last steamer sailing from San Francisco to the colonies took freight to the value of \$140,000, besides a full passenger list. The only chance of the Australian business being lost to this country would be in a transfer of the colonial mail service to Canada, as, without the subsidy now granted to the steamers for the mail transportation, they would be unable to run on a paying basis. But there is no prospect of a change being made in this respect to a more northern line. The existing service is in every way satisfactory, and has so been reported upon by Sir Julius Vogel, the Postmaster-General of New Zealand. If any change be effected at the expiration of the present contract

it will be to shorten the distance traveled by sea, and thus quicken the time by a longer overland travel, which is always faster than that on the ocean. The American route is the quickest and most popular for New Zealand. The number of passengers is increasing, and the mails are delivered in London or New Zealand quicker than by any other route. This is shown by the following table, which gives the average number of days occupied in transporting the mails by the different routes:

	SAN FRANCISCO		
	ROUTE.	DIRECT.	SUEZ.
London to Auckland, N.Z. . . .	37.85	47.92	46.58
London to Wellington, N.Z. . .	39.46	45.61	47.31
London to Dunedin, N.Z. . . .	40.92	44.54	46.63
Auckland to London. . . . .	37.15	42.15	46.59
Wellington to London. . . . .	39.31	40	46

And not only is this the quickest New Zealand mail route, but it is also the most economical for that colony, and stood in the unusual position of having a credit balance of £422 12s. 4d. at the end of June, as compared with a debit balance of £7,736 10s. 7d. at the expiration of the previous twelve months. This was an exceedingly satisfactory showing, and, combined with the shortening of the time in the present contract, the superiority and punctuality of the steamers has tended to increase public opinion in the colonies in favor of the San Francisco service. An ocean service extending into higher latitudes and of longer duration would not be popular, neither could the actual time between New Zealand and London be shortened by the Canadian Pacific route. Therefore San Francisco need not be alarmed at any competition for Australian business from that source.

## A NEW JERSEY STRIKE ENDED.

THE outcome of the strike of the ironworkers at the foundry of R. D. Wood & Co., at Millville, New Jersey, can not be very satisfactory to the labor organizations. The firm made the issue directly against the Knights of Labor, and the men seem to have accepted the situation and severed their connection with the order. It is probable that the defeated organization has in this case reaped the legitimate fruit of allowing itself to be controlled by its hot-headed demagogues instead of by men of sense and cool judgment. For legitimate purposes laborers may be properly organized, but when such organization undertakes to control and manage the business of the persons or firms for whom their members work there can be but one result - sooner or later they must meet with disastrous defeat. No business can prosper in which its proprietors are not allowed to make contracts and carry them out. When workmen interfere to prevent the carrying out of proper business contracts such workmen must give way to men who will study the interests of their employers. If labor organizations antagonize legitimate business interests such antagonism will prove more fatal to the organizations than to anybody else. The Millville episode contains a loud warning to the labor organizations not to wreck their usefulness by demanding too much. Laborers have their rights, but so have employers, and it will be the part of wisdom for the laborers to recognize the fact that employers are not enemies, to be driven from business. - *Chicago Exchange*.

M. M. KLEIN and A. Berg have been studying the action of sugars on the corrosion of boilers, and find that sugar in water has an acid reaction on iron, which dissolves it, with a disengagement of hydrogen. The quantity of iron dissolved increases with the proportion of sugar in the water. The salt of iron formed is the acetate. A neutral decoction of malt also corrodes iron with disengagement of hydrogen; but glycerine and mannite are without action on the metal. These results are worthy of note in sugar refineries and places where sugar sometimes finds its way into the boilers by means of the water supplied. The experimenters in question also find that zinc is strongly attacked by sugar, copper, tin, lead and aluminum are not attacked.