

# PROGRESS

With which is Incorporated  
THE SCIENTIFIC NEW ZEALANDER.

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## Progress

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### EDITORIAL COMMENT.

#### Warning!

THE calamity that has befallen San Francisco should not altogether pass unheeded by the progressionists of New Zealand. Indeed, the lesson taught is one that should affect those responsible for the constructional advancement of our cities and towns in a very large degree. True, the exigencies of progress demand that modern buildings shall be fire-proof, commodious and ornamental; but are we not courting disaster in evading the rules that govern the principles of architecture in a country liable to be disorganised by seismic disturbance? The Californian affair has had no parallel since the great earthquake at Lisbon, when, on the 1st of November, 1755, the greater part of the city was razed to a heap of ruins, forty thousand persons were killed, and the total damage done exceeded £20,000,000 sterling. Yet the people of San Francisco were perhaps justified in conducting building operations in an advanced style, for the liability of the city to serious earthquake has been rare since 1868. Not so, however, with our own colony, which presents a daily object lesson well worthy of the closest attention; and there is yet time for the people of Wellington at any rate, whose city is in process of formation, to abide by the experiences of men who have given lifelong study to building construction in earthquake countries, and to put into force the excellent practices suggested by their writings. PROGRESS has on past occasions published articles, written by a leading architect of New Zealand, advocating serious consideration of this matter; now it is again thought opportune to draw the attention of our large circle of readers, both professional and lay, to the first of a series of articles, based on the opinions of one of the greatest authorities on earthquakes, which appears in this issue. An interesting paper on the interior of the earth is also printed on page 173, from the pen of Beresford Ingram, who lucidly explains the most recent scientific deductions as to the earth's crust, and the cause of earthquakes.

#### The Electric Lighting Industry.

THE *Electrical Engineer* considers that "the electric lighting industry is passing through a very real crisis, and if its supporters are not more aggressively combative, it is likely to experience a very

hard time." These remarks are doubtless prompted by the enquiries that are being made by lighting authorities as to the relative cost, light for light, of gas and electricity. So far as can be judged at present, gas, on the grounds of sheer economy, has had rather the better of the comparison; but the *Electrical Engineer* appears to consider that these estimates have been arrived at on a wrong foundation. "It seems to us," it says, "that the first factor a lighting authority should consider is quantity, or more scientifically, the intensity of light per unit area in the main streets, that will enable trade and traffic to be carried on in the best and most economical way under the existing modern conditions. When they have determined that intensity, then, and not till then, should the cost to provide that intensity by various kinds of illuminants be considered. We have no hesitation in saying that nothing at present known is as cheap as electric energy to give the lighting which ought to be provided in our main thoroughfares. We do not forget—and the electrical engineer ought never to forget—the immense strides made by gas engineers since the introduction of electricity as a luminant. The electrical engineer, partly because of his cocksureness, has not made so great a comparative advance. It seems to us that sometimes he forgets that good lighting depends not only on candle-power, but quite as much, if not more so, upon the equable diffusion of light. . . . While the law that intensity varies with the square of the distance holds good, the limit of distance between the point of generation of light is practically determined, and intense centres of light at long distances apart should be avoided. The people, who from time to time have suggested huge candle-powers on high masts at long distances apart, have failed to prove the practicability of the idea, as might have been expected, for the system is wrong in principle."

#### Australasian Meteorology.

UP to the present day, each of the various institutions for studying weather in Australasia has been working independently for its own local and particular needs, and there has been no central bureau whose business it has been to gather and discuss this wealth of priceless material, now rapidly accumulating, to advance the knowledge of the meteorology of this portion of the globe as a whole. It is true that valiant attempts have been made by individuals to tackle this inquiry, and, thanks to their efforts much valuable information has been gleaned.

Australia, as everyone knows, is a very large tract of country, extending considerably in both latitude and longitude. There is undoubtedly a very close connection between Indian and Australian weather, so that a rigorous study of the latter would, in all probability, be extremely useful in helping to unravel the vagaries of the former. Disastrous droughts are not infrequent in Australia, and at these epochs, when the natural water supply of the country is cut off, millions of sheep die, and in consequence the assets of the country are considerably diminished. It is therefore of the highest importance for the future welfare of our colonies that, in addition to the various institutions which are at present collecting and publishing meteorological observations, there should be added a central bureau to take a broader view of the situation and co-ordinate and discuss not only the Australian meteorological data *in toto*, but those gleaned from neighbouring islands and seas.

According to recent information there seems a prospect of such a scheme being brought into

being, and if it be carried out in a practical manner, the colonies will undoubtedly be benefited in the course of time. Droughts, of course, cannot be stopped, but their effects may be mitigated by an intelligent use of the knowledge that will be gained by such an institution after a careful study of the weather changes—changes which have every appearance of being of a periodical nature.

#### Taranaki Petroleum.

AFTER a long period of abortive pioneer work, those responsible for the oil-boring operations in the Taranaki district have at last demonstrated to their own satisfaction, and to a people appreciative of enterprise, that petroleum is present in fair quantities in that part of the North Island. Something approaching a mild boom has already set in on 'Change—£5 shares selling at a premium of £9—and, generally speaking, the district has been "enthused" to a high degree over the discovery. Enthusiasm on a large scale prevailed during the late "fifties" in the United States on the discovery of oil by E. L. Drake in Venango County, Pennsylvania. The district known as the "oil region" there was quickly transformed from an almost unbroken forest into camps and towns, in which fortunes were made in a day, and often as quickly squandered. Many wells yielded nothing, others lasted but a short time, while others gave enormous quantities of oil. But the chief difficulty surrounding oil fields has so far been found to exist in the knowledge that they are constantly changing—new ones being discovered, or old ones failing—and there is just a possibility that the geological aspect of the question may have been overlooked in the excitement which recently prevailed in Taranaki. A few bores would be commercially useless, and the constantly changing strata of the ground being liable to divert the oil from one place to another, a mint of money would be required, not only to produce the refined oil, but to place it in open competition with the American article.

#### The Exhibition.

FROM the latest report we gather that the total extent of frontages provided for exhibitors in the main building exceeds four miles. This is exclusive of the frontages provided by the machinery hall and the gallery of the main buildings. Steps are to be taken by the Italian Government to facilitate the participation of Italian manufacturers. Thirty-three members of the Canadian Manufacturers Association have made application for space at the Exhibition, through the local Hon. Commissioner. Messrs. Spreckels Bros., of San Francisco have made an offer, which has become conditional through recent events, viz.:—In conjunction with the American Railroads terminating at San Francisco they have arranged to carry back at one-half the regular rates of freight any exhibits which may be returned, provided those exhibits have paid the full rates outward. This concession refers to the railroad companies only, and further than this, Messrs. Spreckels will only charge half rates of freight each way on all exhibits from San Francisco to Auckland, whether returned or not. This is the most liberal arrangement that has yet been made in connection with the oversea transportation of exhibits. Space continues to be taken up in a satisfactory manner, and Exhibition matters are now beginning to take concrete form.