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NEW ZEALAND.

CHRISTCHURCH INDUSTRIAL EXHIBITION

(REPORT ON, BY SIR J. HECTOR, K.C.M.G., M.D., F.R.S., DIRECTOR COLONIAL MUSEUM AND GEOLOGICAL SURVEY OF NEW ZEALAND).

Presented to the House of Representatives, and ordered to be printed.

CHRISTCHURCH ART AND INDUSTRIAL EXHIBITION, 1895.

Sir J. HECTOR to the Hon. A. J. CADMAN, Minister of Mines.

SIR,—

Wellington, 2nd October, 1895.

I have the honour to report that, in compliance with your instructions of 10th ultimo, I proceeded to Christchurch on the 13th ultimo for the purpose of examining the Industrial Exhibition which is now being held in that city. I spent five days in examining the collections, and received most courteous and cordial assistance from the President, Mr. H. B. Kirk, and the other members of the committee of management.

The Exhibition is purely industrial in its nature, having been promoted by the Industrial Association of Canterbury for the purpose of affording the public an opportunity of acquainting themselves with the degree of progress which has been made during late years in the development of manufactures of all kinds. With the exception of a few fittings, the whole of the very varied exhibits are of New Zealand manufacture and production, and chiefly from Christchurch and its immediate neighbourhood.

The Exhibition forms one of a series of similar efforts on the part of the association, and although it is certainly more extensive than its predecessors, proving an increased interest on the part of exhibitors, its chief characteristic is the very choice quality of the articles exhibited, and the solid, businesslike, and tasteful manner in which they have been displayed. The crudeness of design and imperfection of finish which in some degree marred former Exhibitions is not observable on this occasion. All the different trades seem to have settled to their work in a thoroughly organized manner, so that the proper subdivision and application of skilled labour and perfect machinery and methods has resulted, without any special preparation of articles for the occasion, in setting forth a display that for quality would not discredit an old-established manufacturing centre in Europe or America.

For the purposes of the Exhibition the Volunteer Drillshed has been utilised, with the addition of extensive but temporary annexes, which have been skilfully constructed in such a manner that, while they afford substantial and convenient accommodation, they can be easily restored to the original condition of marketable building material without having undergone appreciable deterioration. The cost of the building was about £1,000, including materials, for the subsequent sale of which at the close of the Exhibition the sum of £600 is expected to be realised.

The extent of the Exhibition is nearly one-third larger than the last purely local industrial show, the whole ground under cover being as follows:—

Offices	...	...	...	...	...	...	Sq. ft.
General hall	...	...	...	...	...	...	1,040
Refreshment stalls	...	...	...	...	...	...	4,000
Exhibition annexes	...	...	...	...	...	...	576
Exhibitors' space	...	...	...	...	...	...	13,388
							16,329

35,333

The space disposed of to exhibitors in various classes, representing fees amounting to £612, is as follows:—

	Sq. ft.
Clothing and textile goods	2,124
Food-stuffs	1,996
Furnishings	1,278
Bicycles	1,163
Educational appliances	976
Cooking appliances	678
Carriages	600
Agricultural implements	560
Sanitation and brass work	470
Machinery	384
Pottery	340
Cooperage and woodware	315
Seeds	260
Photography	162
Perambulators	162
Basket-work	150
Hat-work	114
Coal	72
Saddlers' work	63
Jewellery	60
Unclassified	3,732
	15,659

The space occupied is divided among 208 exhibitors, classified as follows, according to number: Agricultural implements and appliances, 6; aerated waters, 4; ammunition, 1; baking-powders, 4; bicycles, 8; brewing, 1; brushware, 1; biscuits, 1; brasswork, 1; clothing, 13; cooperage, 1; confectionery, 2; cider, 2; coffee and spices, 2; minerals, 4; copper-work, 1; chemical manures, 3; cements, 2; clocks, 1; dairy appliances, 5; dental appliances, 1; electrical appliances, 2; furniture, 10; flour, 4; hats, 2; household appliances, 9; ironwork, 4; leather-work, 8; machinery, 3; musical instruments, 2; pottery, 4; provisions, 7; pumps, 2; paper, 2; preserves and pickles, 8; plumbers' work, 2; photography, 8; printing, 7; rope-work, 3; soap and candles, 5; miscellaneous, 52: total, 208.

The most striking display in the Exhibition is that in the Food-supply and Produce Department, which occupies the whole of the main drillshed building, and also a number of detached areas in the annex. In former Exhibitions, and particularly when the exposition of our resources was an intercolonial one, this section has for various reasons been rather weakly represented. On this occasion, however, there is abundant evidence of keen competition and resulting perfection. Every branch of the great industry of converting and preserving animal and vegetable products is thoroughly well represented, proving that capital is largely embarked under skilled, scientific, and practical management in this important branch of our industries.

The large and local public companies, such as the Canterbury Frozen Meat and Dairy Produce Export Company and the Christchurch Meat Company, made very imposing displays to illustrate the great variety of animal products and by-products, which they are able to place on the market. Their greatest production, frozen meat, is necessarily absent; but of preserved animal food, such as bacon, hams, and tinned meats, there is great variety. The last-mentioned company, which has its extensive works at Islington, has a special exhibit of even whole pigs preserved by a special mechanical and chemical process, by which the meat is perfectly cured and ready for the market in a much shorter time than has been effected previously, and, it is claimed, with a better conservation of its nutritive properties. The Belfast Company, by their by-products, such as artificial manures, affords a cheering reassurance that nothing is allowed to go to waste as in former years, and that the restoration to the soil of the greater part of the fixed salts essential to plant growth, which are removed by the present system of exporting the whole carcase of the grazing animals, may be in part at least effected at a moderate cost. The Gear Company's exhibit is confined to tinned meats from their ordinary stock, which, as is well known, deservedly commands a ready market in all parts of the world. The private firms that exhibit in this section have shown much enterprise. Mr. Kincaid and Messrs. Wardell Brothers especially excel in the display of hams, bacon, cheese, and preserved meat. I was invited to inspect Messrs. Wardell's establishment at Riccarton, where the pig-rearing is carried on on a most perfectly organized system, the animals being carefully selected in the first instance, and their nurture scrupulously provided for, so as to secure pure diet and cleanliness. The curing is done at the firms' extensive establishment in Christchurch, where they have refrigerating-chambers and smoking-compartments constructed on the most advanced models. The process of curing they adopt is that of "dry-salting." Soap is largely represented in the produce department, the Silkstone Soap Company having taken special pains to make their exhibits acquire the prominence they so well deserve.

A very attractive point in the Exhibition is the imitation of the Jenolan Caves with soda crystals, which is illuminated by coloured electric lamps.

The perfection in the pickles and conserves, and the skilled and tasteful manner in which they are now got up for the market in New Zealand, is one of the features of the Exhibition, particularly by the display of Messrs. Heyward Brothers. The only difference from the English article is a slight dullness in colour; but it is not improbable that this is due to the New Zealand vinegar being less adulterated.

The two cider exhibits, by the Canterbury Cider Company and by Messrs. Fletcher, Humphreys, and Company, are very suggestive of a great future for our orchard industries. The quality and flavour is excellent, and from analysis it appears that, while the alcoholic strength is much below that of English cider, its qualities as a refreshing and healthy beverage are much superior.

Woollen-goods: The magnificent display of the Kaiapoi Woollen Company is a very grand feature in the Exhibition. It occupies a frontage of 50ft., and for variety and finish has not been equalled at any previous Exhibition. There are 105 different patterns of tweed cloths alone. The light class of goods for ladies' dresses are fully represented; fine qualities of blankets; eight kinds of flannel underclothing; and hosiery in great variety—all proving the great expansion which the business of the company has undergone. I was informed that, during the eighteen years it has been in existence, the Kaiapoi Company has earned and distributed £1,000,416, of which £498,186 has been paid in wages.

The exhibit of the Roslyn Mill, in Otago, is also very important, and has the merit of, for the first time, showing home-made worsted cloths and shawlings, special and costly machinery having been imported for the manufacture of this valuable description of fabric.

There are many other exhibits of clothing by Messrs. Strange, the D.I.C., and other firms, in all of which New Zealand manufactures are utilised, and a very large number of skilled hands must find employment in this direction.

A new feature is the manufacture of mackintosh overalls and cloaks, rugs, and other articles, which are made up in Canterbury, only the indiarubber cloth being necessarily imported.

There is no branch of the Exhibition in which there is such solid advance as in leather, and its application to boots, shoes, saddlery, furnishing, and bookbinding. At the last Melbourne Exhibition the leather exhibit was a good deal criticized, and showed little variety. Now, however, the tanning industry has evidently acquired a very advanced development, and can supply every requisite of the trades that depend upon it, the material being of excellent quality. Among the many kinds of leather shown, I observed the waterproof leather, made by the use of chrome alum as a tanning agent.

In furniture and woodwork the exhibits are very rich and varied, the woodcarving and upholstering being particularly excellent, and illustrating to advantage the fine qualities of our native ornamental timbers. Among the furnishing exhibits a very useful novelty is Mr. Gee's application of a roller in place of pulleys in Venetian blinds, which is a most admirable improvement.

Of carriages, bicycles, and wheeled vehicles there is a very remarkable display, there being several large bicycle-factories in full work in Christchurch, where, owing to the nature of the country and the splendid roads, the use of the wheel has become almost universal, at least among the younger folk. The various modifications and adaptation involved in the great variety of bicycles has called forth an immense amount of mechanical inventions and skill, and marks a real educational development which will react on other manual trades. With the exception of a few fittings, I was informed that the whole of the work, even to the nickel-plating, is done at Christchurch, the metal being imported in the rough.

There are several excellent exhibits in printing and illustrating by the various modern processes of photographic engraving, showing that perfection is being rapidly attained in this most useful art, while most of the silver-prints and bromide enlargements display exquisite finish and tone. The *Lyttelton Times* and *Press* office and Messrs. Whitcombe and Tombs have particularly taken great trouble to make a complete illustration of the endless variety of appliances and processes employed in the business of publishing. Musical instruments are well represented by an organ built by Mr. Sandford entirely from New Zealand woods and locally-made metal pipes, the metal used being also a local invention known as spotted metal. The maker informed me that for rich tone and resonance no wood is superior to rimu for this work. Locally-made pianos are exhibited by Messrs. Milner and Thompson, some of them being fitted with the firm's ingenious patent appliance for facilitating tuning. The workers in metal show the most advanced models of agricultural machinery, for the make of which New Zealand is now famous in other colonies, and even in America. Messrs. Scott Brothers make a very extensive exhibit as usual of vertical and horizontal engines and cooking-ranges of every size and scale of expense. Mr. Price shows excellent force-pumps and brass castings. Mr. Garland, who is one of the few exhibitors from Wellington, makes a highly-finished show of baths and domestic tinware. Mr. Crompton excels in galvanized-iron wire. Messrs. Taylor and Oakly and Mr. Danks are large exhibitors of sanitary appliances and plumbing. The Angus pump, exhibited by Messrs. Atkinson and Tomlin, seems to be a successful contrivance for overcoming the chronic defect of most pumps, which is that they constantly require priming.

The exhibit of the Christchurch Gas Company is very large and varied in its nature, illustrating almost every application which it is possible to make of gas for lighting and heating purposes. It seems almost incredible that such a variety of cooking-ranges, bath-heating apparatus, gas-boilers, and illuminating appliances of all kinds could have all been locally made with such a degree of excellence and finish, but I was assured that this was the case.

Mr. Franter's exhibit of electrical apparatus, much of it also locally manufactured, with its shock-giving machine, seemed to be a constant source of attraction to large crowds.

The most attractive part of the Exhibition, especially to the young people, was undoubtedly the workers' department, and it was unfortunate that the Committee were not able to devote more space to this important educational display. Twenty different technical industries were in active operation, and the space in front of the benches thronged night after night with eager observers and inquirers, to whom information was imparted in a most genial manner by the working exhibitors. A very prominent bench is that of the workers' branch of the School of Art, where the following art and technical branches were in progress: Art-modelling in clay, the designs being chiefly from specimens of native birds and plants; modelling in plaster-of-Paris, castings, engraving in cameo-

work, art-work in metal, pottery, and mosaic. The work is excellent, and proves that this school of applied science is doing good solid work in developing the artistic and creative power of the students.

The Sloyd classes of the Boys' High School, under the management of Mr. Hurst Seager, gives a very remarkable exhibition of geometrical crystallisation form. In each case the pupil is required to draw accurately the proper faces of the desired crystal from calculations, and afterwards to reproduce it in skeleton with wire, in hollow with cardboard, and in solid with soap. Carpentering- and joining-work is also shown by the school, the lads seeming to take great pleasure in illustrating and explaining everything.

The working dynamos and a variety of electro-magnetic machines, part of the installation that supplies light to many of the exhibition stalls, together with a 1,000-candle-power lamp outside the building, supplied by Mr. R. Turnbull, of Wellington, attract much attention, and were fully explained to interested crowds by Mr. C. Seager and Miss Seager, who distributes coffee made by an electric fire to illustrate the thorough manner in which that erratic power has been domesticated.

Wood-turning is also well exhibited by Mr. Edmonds and assistants in its various applications, and all in native woods. Metal-turning also, by Mr. Danks. The beautifully silent and pliant work of the potter's wheel is skillfully displayed by Mr. Luke Adams. Mr. H. Wilson, assisted by his clever pupils, are busily engaged in bold carvings in wood and in soap, which latter seems to be a capital material for exercising this art upon.

Mr. Hoffman shows to what perfection basket-work can be brought, and Von Surakowaki manufactured the most complicated looking articles in wirework in a mysteriously rapid and simple manner.

Hat-making, the manufacture of lead lights, organ-pipe making, type-setting, and printing are all represented in operation, and one of the most interesting parts of this section was Mr. Partridge's working jeweller's bench, at which the assistants are two apprentices from the Deaf and Dumb Institute at Sumner. The intelligence and accuracy with which they performed their work, from the fusing of the silver to its finished manufacture into trinkets, was a most interesting sight, and proves how well their mental faculties have been trained and developed in spite of their great natural disability.

The mineral exhibits were not extensive, so far as raw materials are concerned, there being only a few large blocks of coal from the West Coast, and a collection of rocks and ores from the Malvern Hills district, collected by Mr. Ford; also a sample of titaniferous iron-sand from Amuri.

The exhibits of manufactured materials is excellent. The pottery, earthenware, and fire-bricks shown by Mr. H. B. Kirk, the President of the Exhibition, being remarkably prominent; so also are the lime and cement exhibits from Mr. Wilson, of Auckland, and from the Milburn Company, of Dunedin.

The concert hall, which holds about seven hundred persons, was in daily use, generally both in the afternoon and evening, a well-selected programme of lectures, concerts, and other entertainments having been framed before the opening and strictly adhered to. The attendance at the Exhibition was always good, and on some nights the buildings were decidedly overcrowded. The takings during the first three weeks, up to the time of my visit, had been about £70 on ordinary days, and £110 on Thursdays and Saturdays, which are half-holidays, so that there should be no doubt as to the financial success of the undertaking. The educational aspect of the Exhibition was well attended to, the various city and country schools being mustered in succession, and taken round the Exhibition to see the exhibits. The decoration of the interior of the Exhibition was simple but effective, and a pleasant feature was the constant supply of fresh flowering-plants. The refreshment-stalls seemed to be well organized and largely patronised, and the Committee had evidently, as a labour of love, done all in their power to secure the comfort and gratification of the visitors. A very good catalogue of the exhibits, profusely illustrated with photo. engravings, was distributed at a moderate cost, and must be referred to for a complete enumeration of the exhibits.

In this brief notice it has only been possible to indicate a few of the most important of the exhibits, and it is not for want of merit that so many have been left without mention. The notices of the Exhibition in the daily and weekly newspapers have been very complete and skillfully written, and I understand that, founded on them, a pamphlet giving a complete record of the Exhibition is being compiled.

In concluding this sketch I have great pleasure in expressing my satisfaction with the success of the Exhibition in advancing the objects for which it was promoted.

Any sum which arises as a profit is, I understand, to be devoted to the erection of a permanent home for industrial exhibits and class-rooms where technical education will be imparted. With such an institution it will be more easy and less expensive to organize future Exhibitions at proper intervals of time.

From the experience gained it appears to be very desirable, in the interests of our rapidly-developing industries, that such expositions should be repeated frequently, and in different parts of the colony, as they exercise a marked influence on the educational development of the adult population in a new country.

I have, &c.,

JAMES HECTOR.

The Hon. A. J. Cadman, Minister of Mines.

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