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ADDRESS

AT THE OPENING OF THE

Thirtieth Industrial Exposition

DELIVERED BY

E. A. DENICKE, — *Regent*

PRESIDENT OF MECHANICS' INSTITUTE.

SAN FRANCISCO, August 17th, 1897.

LADIES AND GENTLEMEN:—It is my pleasant duty to welcome you to the Thirtieth Industrial Exposition of the Mechanics' Institute. I hope you will agree with me, that each Exposition is an improvement on the last.

On this occasion, in compliance with a resolution passed at a late congress in this city, our chief feature will be an exhibition of Pure Food. In his address of welcome to the members of that congress, Mayor Phelan observed: "While war slays her thousands, peace slays her tens of thousands with agencies carried on through the ordinary channels of trade—that is, by deaths caused by disease-bearing foods." On the same occasion, President Kerr, of the Manufacturers' and Producers' Association, said: "It is a well established fact that no State can hope to reach its true development which does not contain within its limits not only the producer, who takes from the hand of nature the materials required by mankind, but also the manufacturer, who converts the products into the finished forms required by modern civilization. To combine these processes, so that we can become as nearly self-supporting as economical conditions will permit, should be the aim of every enlightened citizen. It is the duty of the manufacturer to guard the interest of the producer as his own; while, in turn, it

is the interest of the producer to foster the development of manufacturers, so that their combined efforts shall result in a perfect product, which shall be sought for by commerce at home and abroad."

The same thought inspired the Board of Health to undertake an inspection of foods, with a view to extinguish the trade in spurious foods. This was a wise idea. The prosperity of this State largely depends upon the excellence and purity of the articles produced here for sale at home and abroad, and, as this is a food-producing State, upon the excellence and purity of our food products especially. The agitation against impure food is not confined to California. It has spread throughout the world, and the region which establishes a reputation as a pure food producer, is the region which will take in the shekels. By vigorously insisting that every article which bears the California brand shall be what it purports to be, and the best variety of its class, we shall attract custom from all parts of the world, and the money of Europe, Asia, Africa, and America, will come here to enrich our growers, our manufacturers and our merchants.

We want to perfect our processes so that the words "made in California" shall be, all the world over, a guarantee of quality, purity and general excellence. Nature has done much to help us to this end. Commercial honor, which is deeply rooted among our people, will assist by making the adulterator an object of scorn and contempt. But technical knowledge, which teaches how to improve our processes, and to take advantage of scientific discoveries and the invention of genius, is also required to accomplish the end, and it is to promote that knowledge that exhibitions, like the one I now invite you to inspect, are designed. It is not enough that our State should bloom like a garden. We must learn how to deal with its fruits so as to extract from them their utmost possible utility and attractiveness. It is only when we have learned this that they will be sought for by consumers in every region under the sun, and our cities will become hives of industry, splendid with palaces and monuments, this the metropolis of the Pacific, as New York is the metropolis of the Atlantic.

Fifty years ago, a rebellion against impure food broke out in England; there was hardly an article of common consumption that was not adulterated, and there did not seem to be any way of punishing the adulterators. At that crisis a chemist, whose name was Hassall, undertook to smoke out the dealers in spurious articles, and he went about his work in a very ingenious way; he bought at various stores small quantities of leading articles of consumption, such as tea, coffee, sugar, chocolate, bread, butter, cheese, preserves, pepper, vinegar, wine, beer and spirits, these he analyzed, and he published the analysis in the "Lancet" newspaper, with the names and addresses of the dealers who had sold him adulterated articles. A terrible storm arose. The "Lancet" and Hassall were flooded with libel suits. But they kept on smilingly, and the end of the fight was that no conviction could be got against the paper or the chemist. The fraudulent dealers lost their customers, a law was passed in Parliament to fit their case, and now it is as hard to find in London an adulterated article as it was fifty years ago to find a pure one. I hope that the Exhibition now opened will induce some of you to take equally energetic measures to maintain the reputation of California as a producer of pure food.

I am sorry to have to say to you that the successive Mechanics' Institute Fairs, while demonstrating the development of the State as a producer, have not illustrated a corresponding progress in manufactures. This has been due to various causes, one of which is the high price of coal. I am happy to express to you my hope that this drawback is likely to be removed; what steam has been to the nineteenth century, electricity will be to the twentieth; and I look forward to the time when, instead of bringing coal from the mines, it will be converted on the spot into an electric fluid, which will be conducted by wires to the cities and villages, there to be used for power, light and heat. This will not only cheapen all the processes of manufacturing industry, it will substitute for the mephitic coal gases, which are one of the chief causes of disease in the crowded haunts of men, an atmosphere as pure as that of the country,

and will bestow on the working class the blessings of fresh air while they are enjoying the blessing of pure food.

The foaming torrent of Niagara has been harnessed and buckled to machinery for the creation of electricity in the great State of New York. We have, in this State, water power in the streams and lakes of the Sierras, which can be utilized in the same way. There is no limit to the volume of electricity which skillful engineering can make them yield. Machinery adapted for the purpose was exhibited at our last Mechanics' Fair. By turning it to account, California will ask no odds of States which are more bountifully supplied with the best kinds of coal, and will overcome the drawback of its geological formation.

But this new power, with its vast possibilities, should remain the property of the people of the State, and be guarded against monopoly by individuals or corporations. A special bureau should be created by the Legislature, with authority and means to erect the necessary plants and storage reservoirs. Such a bureau could be manned by a selection from the most distinguished graduates in engineering at the two universities, and there is ample labor in our cities to perform the mechanical work. Under proper management, electrical works, such as supply the Folsom prison with the power it uses, would become a source of income for the State, and might in time justify a reduction in the tax levy. *

A question arises, however, it can not be kept back, are our California boys and girls receiving such an education as will enable them to take advantage of "the tide in the affairs of men, which taken at the flood, will lead to fortune?" Are they receiving a proper technical education? I look upon this question as one of the most important we have to grapple with to-day—as a question which should be especially considered at the thirtieth fair of our Institute, which ever since its birth, has by its library, its classes, its lectures and its fairs, established a right to consider itself a pioneer in the field of technical and mechanical education.

The whole of the United States is drying up for the want of technical education. It is dropping behind other nations, and

growing poor when they are growing rich. There is an army of unemployed workers, because the workers are unskilled, and consumers are obliged to send abroad for articles which we might just as well make at home, if we had the skill. An unskilled workman is like an unarmed soldier. He is helpless, and cumbers the earth. He is an incubus for want of technical training.

This is especially the case in textile industry. We cannot compete with European nations in textile fabrics; not from want of brains, not from want of raw material, but because we do not know how. In quality, a part of our technical schools are fully equal to similar establishments in Europe, but there are not enough of them, and the children of the poor have not been educated to make use of those which exist. Look at Germany; once, and not so very long ago, at the bottom of the ladder, and now at the top, owing to her splendid system of technical education. During our Centennial Exposition, in 1876, the German exhibit was the object of a report by Commissioner Herr Reuleaux; he summed up his conclusion in the drastic phrase, "*Billig und schlecht*." (Cheap and nasty). It was indeed far behind the exhibits of England, France and the United States. Germany realized the truth of the Commissioner's verdict, and set to work with energy, foresight, intelligence and patriotism, to repair her defects. The result is known to all. In the windows of stores not only in England and this country, but all over the world, goods are marked, "Made in Germany."

Seventeen years after the Centennial Fair, Germany's exhibit at Chicago was a veritable triumph in many branches of industry as well as in science and art. She had raised herself to the first rank among producing nations by the careful education of her masses. United States Consul Monaghan, of Manheim, gives the results of his observations in a valuable paper, wherein he says: "The schools are here, never to go. The sooner we get them in the United States—for get them we must, if we will hold our home markets, to say nothing about foreign—the better." United States Consul General Raine says of the Crefeld school of weaving: "Some years ago the Crefeld industry

was nearly ruined; the old manufactories were unable to struggle any longer against French, English and Swiss firms. A few Crefeld manufacturers, dejected but not discouraged, founded in this city a weaving school, and this very soon changed the situation. Now the Crefeld factories contest with even Lyons for the supply of the markets." United States Consular Agent Neuer, in his description of the Gera weaving school, says: "I commend the German system of technical education as well worthy the serious consideration of our manufacturers, as trained and skilled operatives must be of vast service to us. It is an important factor, and closely connected with the highest interest of our laboring classes. The advancement of German commerce in all parts of the world is generally admitted, and while government aid may partly account for the fact, it is no less the superior schooling of the people which opens new markets for the Germans." In fact, so rapid has been Germany's rise as a manufacturing country, and so excellent has been the quality of the goods exported, that she has successfully challenged England in her own home market.

Manual training and technical schools have been established in every European country, and in Japan likewise. Statesmen believe that it is wise, economical and patriotic to insist upon such academical studies as will make the student both a better man and a more efficient producing machine. The mechanic of the future will need something more than the rudiments of mechanics; he will require general culture as well, and a broad knowledge of the requirements of humanity, to make a man of him; he must be taught something of the constitution of his country, and something of social science, so that he shall know the record of human progress, understand the feeling of patriotism, and estimate the value of liberty. His training must fit him to vote intelligently. He can learn all this, together with the practical rules of his calling, at a technical school, if it be intelligently conducted.

Mr. Felix Adler, the Director of the Workingmens' School of New York, explained the purpose of such schools in terse phrase:—"The worker in the factory of to-day too often moves like a machine among machines. He does not comprehend the

wonderful processes which occur around him, and his mind is blunted and degraded by constant contact with operations of whose principles he is ignorant. Far otherwise would it be if he could be so far educated as to understand the nature of the material with which he deals, the laws which the gigantic forces which he utilizes obey, and if the mechanical contrivances among which he labors became transparent to his eyes so as to reveal their underlying plan. The worker becomes truly independent then, when he has intellectually mastered his work, and it is one of the fairest promises of the creative method and of manual training that it will build up the intelligence, give a new dignity to labor by putting mind into it, and saturate the daily toil of the masses of mankind with understanding."

United States Commissioner of Labor Wright says, in one of his reports: "It is no wonder that the German craftsman, with so many incentives to study, with so many facilities of acquiring skill in his trade, and living in the atmosphere of industrial thought, becomes the accomplished specialist that he is."

At the present time, the boy leaves the public school with his education incomplete to learn his trade in the shop. When the manual and technical schools of training are as numerous as I hope and believe they soon will be, he will leave one school to enter a higher one, where besides becoming a skilled mechanic his moral and mental education will proceed hand in hand with his technical training.

The great nations of Europe have learned a bitter lesson by Germany's competition! Can we afford to ignore it and neglect their experience? We pay out millions upon millions for goods which are not made at home, for want of technical education.

We now have a Tariff—may it remain undisturbed for many years! so that Congress can busy itself with the revival of our Merchant Marine, and then may it be hoped that it will find time to consider a subject which is vital not only to our trade and industry, but to the wellbeing of the entire laboring class! But whatever it does, we, here in California, owe to ourselves, to foster technical education, and to help the Lick school, the various technical branches of common school system, and the

Wilmerding school, which is about to be built, to supply California with skillful artisans enough to make this a great manufacturing State.

One last word. One morning this summer, before sunrise, I stood on the summit of a spur of the Sierras. Before me stretched the rich valleys of the Sacramento and the San Joaquin, with their thousands of happy homes, and along their Eastern border, the lofty snow-topped giants of the Sierra. A beam of pale light shot across the Eastern sky, then the peaks of the snow-tipped mountains glowed with roseate fire, and gradually the welcome sun poured its golden rays down the slopes, along the rippling streams, to the valley below. In the rivulets silvery trout leaped in joyful greeting to meet him; the loaded grain bowed its heavy head in thankful recognition; the apricot, the apple and the peach turned their blushing cheeks his way for their morning kiss; and the rose, the magnolia and the morning glory unfolded their bursting buds to receive his eager embrace. All this passed before my fancy as I, too, felt the comforting warmth of the great planet's first rays. Overpowered by so much blessing, I would have thrown myself upon my face to relieve an overflowing heart in grateful tears, but, as I moved, I heard a whirring, hateful noise, and there before me lay in mottled coil, its ugly head raised, about to strike, a rattlesnake. Bounding backward, I caught up a heavy boulder, and crushed the reptile. Then, winding my steps downward, I thought how our fair daughters and struggling sons were also threatened and robbed of the full enjoyment of their life by a nasty reptile in human form—I mean the political "boss," who is poisoning our civic life. We, too, must find a boulder to crush him, and it is at hand. One hundred men, good and true, are working night and day to find it. When they have it, it will rest with you to use it—for the boulder I mean is the *New Charter*.

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