new page

Gal 78

CHAPTER XV 11 caps

AFTER TWENTY YEARS 11 c+s.c. letter

As a matter of fact, the long depression of the nineties had not paralyzed the productive energies of the nation, however much it had temporarily weakened them. If four million men were thrown out of work, twenty million had work. Though a continuous succession of bank and industrial failures had occurred, wealth grew steadily through the decade as a whole. The total wealth of the country rose from $78,500,000,000 in 1890 to $126,700,000,000 in 1900, up to that time the greatest gain ever made in a single decade.[1]

Moreover, the depression distributed its losses as unequally as prosperity had its gains. Many men find in hard times their chief opportunity for profit making. ~~They make a~~ It was their practice to ~~of saving~~ save up money in good times in order to buy cheap by what their fellows must in a depression sell at any price. Henry Clews, an acute observer of Wall Street, said that the veterans stayed at home in normal times, but when panics came could be seen "hobbling down on their canes to their brokers' offices." There they bought good stocks with the money they had been accumulating. When the emergency passed and prices went up, these wise

[1] R. R. Doane, The Measurement of American Wealth (N. Y., 1933), 11.

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331

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speculators cashed in, putting their gains away for another crash.[1] The buying of stocks and bonds at the height of the Panic of 1893 enlarged more than one fortune. Besides, shrewd financiers with money on hand transacted an enormous business selling currency at a premium. Generally it was the country bank, wanting money to meet local pay rolls, that ~~paid~~ offered the best premiums; or it might be a business man who, finding himself in a particularly tight hole, willingly paid cruel rates to save himself.

Great industrial leaders, like Carnegie in steel and Rockefeller in oil, had always made it a part of their financial creed to ~~keep~~ lay aside large reserves of money ~~where they could put their hands on it~~ for use in times of business slump. This they did partly for their own protection and partly to take advantage of the distresses of others. Both Carnegie and Rockefeller added immensely to their properties during the hard times of the nineties.

Some business men weathered the Panic because they had foreseen its coming. John H. Patterson, head of the National Cash Register Company in Dayton, Ohio, was of this type. Buying the business in 1884, he had perfected the machine, "acquired" all competitors, and consolidated his interests until the result looked so much like a monopoly that the United States began suit

[1] Henry Clews, Fifty Years in Wall Street (N. Y., 1908), 19.

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against him under the Sherman antitrust law. In 1880 Patterson had read a book entitled Prophecies of Future Ups and Downs in Prices by Samuel Benner, an Ohio farmer. The book carried a subtitle: "What years to make money on pig iron, hogs, corn, and provisions." According to the author's calculations, based on his understanding of past history, a major panic occurred every eighteen years, which made another one due in 1891.

Accepting Benner as his financial prophet, Patterson would call his board of directors together whenever he believed a slump was on the way and demonstrate on a blackboard what was coming. Drawing a big "V" he would explain, "Here we have a valley of depression. Business is going to drop right down to the bottom and then come up the other side. We can drop with business or we can build a bridge and go across. Let's build a bridge." Such a bridge they built in the crisis of the early nineties. In 1892 Patterson sold more cash registers than ever before in the company's history, and in 1893 exceeded that record by five hundred machines.[1]

Nor did the depression necessarily chill the daring of those who had ideas and no capital. McClure's Magazine was started in 1893 "on a shoe string" by two young editors, S. S. McClure and John S. Phillips, whose faith in ideas was always stronger than

[1] Samuel Crowther, John H. Patterson, Pioneer in Industrial Welfare (Garden City, 1923), 77-78.

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that in a bank account.[1] Not a few men discovered in the hard times a challenge to their resourcefulness. Blocked in one direction they cut out a new road. Thus Arthur J. Moxham, a manufacturer of steel rails in Johnstown, Pennsylvania, found himself with many orders for which he could get no pay. While he was considering a possible shutdown, Henry George came to town and Moxham, who was a single taxer, told him his story. Whereupon George suggested that the "bonds of the street railroad companies ordering rails should be taken in payment of their orders; and that certificates to be used as money be issued against them." Calling his employees together, Moxham presented the proposal, which involved their receiving a third of their wages in cash and the rest in certificates. When they assented, the plan was explained to the storekeepers and landlords of the town who agreed to take the substitute for cash. The result was highly satisfactory. The scheme worked to the profit of both the company and the several thousand workmen.[2]

1 See A. M. Schlesinger, The Rise of the City (A History of American Life, X), 183-184.

2 George used this experience as an illustration of what the United States government might do if in trouble: "issue from its own treasury a paper currency, based upon its credit and interchangeable with its bonds." Henry George, jr., The Life of Henry George (N. Y., 1900), 557-558.

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The depression failed to check the development of the two most important new industries of this generation: electric lighting and electric power. This was amply demonstrated at the World's Columbian Exposition in 1893.[1] The courage with which Chicago proceeded with the fair in a panic year and the exhilarating response of the people of the country to her daring presented an unusual opportunity to manufacturers of electric equipment. The chief undertaking was the lighting of the buildings and grounds. Only two concerns at the time were prepared to handle so large a venture: the Westinghouse and the General Electric. Westinghouse carried off the contract, which called for the use of the alternating current.

The only efficient lamp then ~~in use,~~ known, however, was entirely controlled by General Electric patents. When Westinghouse sought to buy these lamps, the General Electric would not sell and the court refused to compel it to do so. But he was not a man easily balked. Already his associates had been working on the development of an incandescent bulb built around a patent which he had acquired some years before. Now they turned full force to make practical what they had in hand. The result was the "stopper lamp," not nearly as perfect a lamp as Edison's for it had frequently to be changed.[2] It was with this bulb that the

[1] For a general account, see Schlesinger, Rise of the City, 283-286.

[2] F. E. Leupp, George Westinghouse; His Life and Achievements (Boston, 1918), chap. xii.

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fair was lighted. Taken as a whole, it was a brilliant performance, the more dazzling because unlike anything ever before seen in the country. It marked the beginning of incandescent night illumination in the United States as well as of illuminated advertising.

Five thousand arc and one hundred and twenty thousand incandescent lamps made up the display, which was operated with twenty-three thousand horsepower. Those who attempted to describe its magic exhausted their vocabularies in search of superlatives. Murat Halstead declared that "the earth and sky were transformed by the immeasurable wands of colossal magicians; and the superb dome of the structure, that is the central jewel of the display, is glowing as if bound with wreaths of stars." He added that the spectacle was "more resplendent than the capitals of Europe ever saw when ablaze with festivals to celebrate triumphant peace or victorious war."[1]

The success of the Westinghouse alternating current at Chicago made a deep impression on the International Niagara Commission which was engaged in advising the Cataract Construction Company as to the best means of developing power at Niagara Falls. This commission consisted of eminent engineers and scientists from various countries, headed by Sir William

[1] Murat Halstead, "Electricity at the Fair," Cosmopolitan Mag., XV (1893), 577-582.

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Thomson who was as obstinate an opponent of the alternating current as Edison himself. In the negotiations with the different power companies which sought the contract ~~which~~ that the construction company had to award, his important influence had been in favor of the direct current. But what the Westinghouse engineers were able to show the commission in the Pittsburgh plant as well as at the Chicago Fair, combined with the company's extraordinary salesmanship, brought the contract to Westinghouse in October, 1893. A year and a half later the first of three five-thousand-horsepower dynamos was at work, and electric power was soon after on sale in Buffalo, twenty miles away. The day of long-distance transmission of power had come.

The return of normal times in the closing years of the twenty-year period afforded a clearer view of the laborious road which this generation had had to traverse. The most notable development had been an extraordinary unification of the nation's economic life. This had proceeded with accelerating tempo until the single year 1898 beheld the formation of twelve huge business combinations.[1] The outstanding example of the so-called franchise trust was, in 1898 as in 1878, the Western Union Telegraph Company. Its 206,202 miles of wire had grown to 874,420. Instead of carrying 24,000,000 messages, it now

[1] John Moody, The Truth about the Trusts (N. Y., 1904), 453-467.

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transmitted over 62,000,000.[1] Its only competitor, the Postal Telegraph, acted, in matters of rates and treatment of the public, as its ally. The two of them constituted a practical monopoly. As for industrial amalgamations, the Standard Oil Company, which the congressional committee had termed in 1888 "the incentive to the formation of all other trusts and combinations," was still the almost perfect monopoly. Thus the end of the period witnessed the triumph of that process of interlocking and combination which at its opening had been so generally challenged. Neither appeals to the philosophy of democracy, nor political agitation, nor restraining laws, nor even the recurring depressions which had disclosed the overexpansion and exploitation of industrial mergers, had halted their progress.

The triumph of industrial consolidation knitted the country together in ever closer bonds, increasing the feeling of nationhood. Since each aggregation strove to enlarge its market, offering more and more people something they wanted and could pay for, each worked systematically to push its organization into fresh territory. The peopling of the Great West had added a ~~great~~ huge new population of potential customers. From 1880 to 1900 the eleven states and territories of what the census called the Western Division had grown by nearly two and a half million. At the same time Texas had gained a million and a half; the two

[1] President of the Western Union Telegraph Company, Annual Report for 1898, 6.

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Dakotas nearly six hundred thousand; Nebraska and Kansas each a half million.[1] Makers of farm machinery, representatives of the telephone, salesmen for the great electric-equipment companies, the sugar trust and the oil trust penetrated to the remotest communities, weaving a network of mutual interest. Not only did they build up custom locally, but they almost invariably added a local agent to their far-flung organization.

In this immense task of building a nation-wide market it was more obvious in 1898 than it had been in 1878 that the strong man, whom Andrew Carnegie had celebrated, played a more essential part in great undertakings than did capital.[2] Still clearer was it that the leadership of strong men was the price the country was paying for its rapid development as well as for more abundant comforts and cheaper luxuries. Nowhere was this truer ~~more obvious~~ than in the case of the railroads. In spite of the setbacks which reckless speculation and overbuilding had forced on the railroads in 1883-1884, and again from 1893 to 1896, they had grown in mileage and had solidified the territorial divisions already well defined in 1880. There were now six recognized rail groups: the Morgan, Vanderbilt, Harriman, and Pennsylvania interests, controlling approximately 20,000 miles each, the

[1] U. S. Twelfth Census (1900), I, xxii.

[2] See earlier, 000.

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Gould-Rockefeller group 16,000, and the Hill interests 5000.[1] The control of these giant systems did not rest on so simple a method as direct ownership. Ownership of mileage was combined with leases, and "community-of-interest" arrangements. ~~and constantly swayed by strong personalities on boards of directors.~~ In the conduct of these systems a powerful financier or speculator acting as director -- a Gould, a Morgan, a Harriman -- ~~might~~ exert more influence than a weak individual or group of individuals ~~than a big block of stock belonging to a weak individual or group of individuals.~~ owning a bigger block of stock.

The interlocking of consolidations in different economic fields had caused grave uneasiness in 1878. By 1898 many accepted it fatalistically as inevitable. The telegraph lived off the railway; the railway could not operate without the telegraph; while the size and wealth of certain monopolistic industries made servants of them both. All these undertakings, moreover, were equally dependent on those who controlled large sums of money, whether they were bankers looking for investments or industrial magnates who, like Jay Gould or the Standard Oil group, had made greater profits than were needed for their own businesses. It was the direction which these interested groups of bankers, railway men and industrialists -- these strong men -- had given the country that in twenty years had so swiftly nationalized its resources and, for good or ill, had changed the whole structure of the land.

[1] See H. U. Faulkner, The Quest for Social Justice (A History of American Life, XI), 33.

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The chief complaint against this system was that its leaders had taken too big a share of the profits for themselves. The country was prone to forget the benefits it had derived. It complained of the cost of telegraphing, but failed to remember that in twenty years the number of offices had increased from eight thousand to more than twenty-two, thus giving hundreds of thousands more men and women the advantage of quick communication. Moreover, the service was cheaper, the average charge per message having fallen from 38.9 cents in 1878 to 30.1 in 1898.[1]

One enormous benefit, little appreciated at the time, was the example of efficient organization and operation which the big combinations were setting the country. Under the old individualistic methods of doing business each proprietor, each employee, worked along in his own way; but as undertakings enlarged and consolidated, systematized practices began to be the rule. Order, economy, stability, became the ideals of operative heads, especially those touched by Taylor's new science of management. An undertaking was analyzed as never before, and each function given proper attention. At the same time improvements in office equipment added to business efficiency. The typewriter, still regarded as a novelty early in the period, became before many years an important adjunct to the conduct

1 President of the Western Union Telegraph Company, Annual Report for 1898, 6.

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of every enterprising business office. In the single year 1890 a little over $3,600,000 worth of typewriters and supplies were sold; ten years later nearly twice as much.[1] After the typewriter had come the adding machine, invented in 1886 and made practical in 1891. In 1892 the first addressograph appeared. The filing case, the card catalogue and the tabulating machine followed rapidly. Business offices were coming to have their special technology as did the farm and the factory.

The temptation to condemn industry as a whole because a few powerful men became inordinately rich not only prevented a proper weighing of the advantages the public was receiving, but it prevented cool and effective dealing with the roots of the evil. Popular attention fastened on the conspicuous or wicked individual rather than on the nature of his practices which the existing economic and political system made possible. In the twenty-year period two major attempts to correct basic wrongs had been made: the interstate-commerce act dealing with railroad abuses, and the Sherman antitrust law. Neither had proved an effective remedy. If possible, the accomplishments under the interstate-commerce act were even more discouraging than under the Sherman law. The interstate-commerce commission

1 Bureau of the Census, Abstract of the Twelfth Census, 320.

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in its report for 1898 declared that a large part of the rail transportation of the country was still on an illegal basis.[1] Although both statutes proved unsatisfactory in operation, they at least committed the government to the principle of regulation and, as their weaknesses became clear to the public, it was certain that there would be amendments by Congress and judicial decisions which would strengthen the arm of the government.[2]

One of the chief causes of the recurrent depressions had been the wanton flooding of the land with railroad and industrial securities, issued in the name of legitimate expansion but frequently for no other purpose than sheer speculation. Apparently the country learned little from the Panics of 1884 and 1893, in which gambling in unsound stocks had been a big factor -- not enough at least to see to it that no security be issued without full information to the public as to what was behind it. Massachusetts attacked the evil of stock watering in the case of public-service companies, forbidding them to declare a dividend or create additional stock unless the par value was paid in cash to the treasurer.[3] James J. Hill made a

[1] U. S. Industrial Commission, Report (Wash., 1900-1902), XIX, 353.

[2] See Faulkner, Quest for Social Justice, 116-120, for later developments.

[3] U. S. Industrial Commission, Report, XIX, 417-418.

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suggestion which, had it been followed, would have checked if not prevented speculative orgies: a law requiring company desiring to do business outside the state in which it was incorporated to satisfy a federal commission that its capital stock was paid up in cash or in property taken at a fair valuation.[1] The people in general preferred to take their chances. Before the end of 1898 ~~was at an end~~ railroads and industries were preparing to issue securities to carry on proposed expansion and consolidation such as the country had never dreamed, and, far from attempting to control these issues, a huge speculative public eagerly awaited their appearance.

The farmer, despite many ups and downs during the two decades, enjoyed a distinctly improved position in the national economy as the century drew to a close. The prices of his products had advanced. Money was easier than ever before. In ten years the per-capita circulation of the country had increased from $22.88 to $25.15; at the same time his credit facilities had improved. He had used these advantages to lift the load of mortgages, which had so shocked the country when revealed by the census report of 1890, and to better his farming methods. Labor-saving devices played an ever greater part in his operations. In 1900 he had $750,000,000 invested in

[1] J. J. Hill, Highways of Progress (N. Y., 1910), 136.

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implements and machinery.[1] From the state agricultural colleges, experiment stations and farmers' institutes he was learning more scientific methods of tilling the soil and breeding livestock and of combating plant diseases and pests.[2] Food factories were beginning to appear in his district, taking his products in bulk.[3] The handling of milk, the making of butter and cheese, the canning of fruits, the packing of apples, were being increasingly industrialized.

It was necessary that the farmer be on the alert, for he had twenty-five million more mouths to feed than in 1878. To be sure, he had placed more acres under cultivation, nearly a third more, but on this land he was asked to raise not only food for America but an increasing amount for overseas. The nation's prosperity depended, in large measure, upon the amount he could export. By the end of the period his produce made up nearly seventy per cent of the country's total exports. That this represented a relative fall of nearly thirteen per cent in twenty years was due to the tremendous increase meantime in output of America's factories and mines.

1 Bureau of the Census, Abstract of Twelfth Census, 217.

2 See Schlesinger, Rise of the City, 215-216, 234, 236-237.

3 See Schlesinger, Rise of the City, 132-133.

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Not all was rosy on the farm, however. The question of uncontrolled production, of crop surpluses in the future as in the past, continued unsolved. Moreover, many farmers, preferring traditional to the new scientific methods, were storing up trouble for the years ahead. The spirit of haste, of indifference to waste, affected the agriculturists as it did every other class, causing them often to work the land to the utmost without proper provision for replenishment. At the same time they complained bitterly of the greed and wantonness of lumbermen who cut timber over wide stretches of the country, hastening soil erosion and leaving stumps and brush to feed destructive forest fires. The farseeing realized even then that such methods were preparing for one of the greatest tragedies in land history: the ravages of the wind which nothing but abundant and properly placed timber and grass could prevent.

On the whole, the conditions of the wage-earners had also greatly improved in the twenty years. After trying the "one-big-union" type of organization sponsored by the Knights of Labor, the labor movement had turned to the form of organization represented by the American Federation of Labor, one consisting of a league of nation-wide craft unions. By 1893 the Knights had dropped to less than 75,000 and their activities had become political rather than economic.[1] Membership of the

Spell out

[1] Leo Wolman, The Growth of American Trades Unions, 1880-1923 (Natl. Bur. of Econ. Research, Publs., no. 6), 32; J. R. Commons and others, History of Labour in the United States (N. Y., 1918), II, 482.

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American Federation, on the other hand, showed a steady growth, standing at 278,000 in 1898.[1] Under the leadership of Samuel Gompers it had become a compact, militant body, intent on spreading unionism among skilled workers and alert to encroachments on the part of the employing class.

At the beginning of the score of years most labor leaders had favored the legal incorporation of unions. This demand, for example, appeared in the original platform of the Federation of Organized Trades and Labor Unions. There were various reasons for this desire. Incorporation would protect unions against embezzlement of funds by officers, remove them from the possible operation of state conspiracy laws and, by giving the organizations greater stability, would make employers more inclined to deal with them. Peter J. McGuire, secretary of the Brotherhood of Carpenters and Joiners, in urging such action on a congressional committee in 1883, pleaded that, if Congress lacked the power, "it shall assume the power; and, if necessary, amend the constitution to do it."[2] But later experience with the courts in industrial disputes convinced laborites that the

2 Selig Perlman, A History of Trade Unionism in the United States (N. Y., 1922), 152-153.

1 L. L. Lorwin, The American Federation of Labor (Brookings Institution, Publs., no. 50, Wash., 1933), 484.

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disadvantages of incorporation would outweigh the advantages. By the close of the period they had completely reversed their position.

The Sherman antitrust act had an unexpected bearing on the legal status of unions. An early attempt was made to apply it to labor organizations, although the country at large undoubtedly regarded it as applying only to capitalistic combinations in restraint of trade. Thus, in 1893, the federal Supreme Court under the Sherman law upheld an injunction against striking draymen of New Orleans on the ground that the strikers were interfering with the transfer of goods from one state to another. The court declared that, though the statute had evidently originated in a fear of massed capital, "when the Congress came to formulate the prohibition . . . the subject had so broadened . . . that the source of the evil was not regarded as material, and the evil in its entirety is dealt with. They made the interdiction include combinations of labor, as well as of capital."[1] Debs's prison sentence in 1894 was based on the court's right, under the Sherman act, to issue the injunction which Debs had violated. Other cases followed. By 1898 judicial

[1] U. S. v. The Workingmen's Amalgamated Council of New Orleans, 54 Federal, 994.

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interpretation had made it unmistakably clear that the statute applied to combinations whether of capital or labor.[1]

Great strides had been made in state legislation protecting and improving the condition of labor. It touched a wide range of subjects: sweatshops, laundries, mines, railways, occupational devices, the guarding of machinery, housing, free unemployment bureaus, child labor, woman's labor.[2] Some of these laws were defective in form; others were poorly enforced, or were stripped of their value by action of the courts. Nevertheless they brought the wage-earning class under the protective care of the government to a degree unknown twenty years before, and prepared the way for more effective legislation by the next generation.[3]

The American Federation of Labor credited labor's gains to militancy. The unions had learned much from their experience in fighting organized capital -- not to go into a strike without preparation, to keep within the law, to avoid violence, to educate the public as to an understanding of labor's grievances.

1 Felix Frankfurter and Nathan Greene, The Labor Injunction (N. Y., 1930), 8-9, 19.

2 G. A. Weber, "Labor Legislation in the United States," U. S. Dept. of Labor, Bull., IX, no. 54, 1421-1486.

3 See Faulkner, Quest for Social Justice, 76-80.

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Over 6,600,000 persons were out on strike for longer or shorter periods in these twenty years 1881-1900, at a cost to industry of about a half-billion dollars, of which two thirds was in wages. On the whole, labor issued from these conflicts more successfully than capital, primarily because what it sought was so often just. Moreover, organized labor succeeded better than unorganized. The proportion of victories, according to the labor bureau, was fifty-one per cent for labor, thirty-six for the employer and the rest undetermined.[1] Did industrial warfare pay? The answer depends on whether the real grievances could have been settled by conciliation or arbitration to the satisfaction of both sides. In a considerable number of cases undoubtedly this might have been done. The gain in developing a sound technique for threshing out common problems and adjusting them by peaceful means would have been tremendous. But neither side, unfortunately, was interested primarily in a peaceful industrial life. Both strove to achieve their immediate material ends and used those methods which promised the quickest results.

If labor and capital had changed but little in ambition and methods, the attitude of the public towards these dominant forces in the nation's economic life had changed. A continuous stream of official investigations by the state and federal

[1] U. S. Industrial Commission, Report, XIX, 864-870.

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governments, of private law suits, of reports from courts and commissions, supplied a body of data such as the people had never known before. This mass of information lay behind the legislation which increasingly manifested the government's tendency to intervene in economic concerns. An ever larger element of the public was growing to realize that the doctrine of laissez-faire too often cloaked the greed of the strong. "Our civilization," declared Henry Demarest Lloyd, "has followed the self-interest of the individual to learn that it was but one of the complex forces of self-interest. The true laissez-faire is, let the individual do what the individual can do best, and let the community do what the community can do best."[1] It was this latter principle, which Lloyd termed the "laissez-faire of social self-interest," that had bred such ~~laws~~ legislation as the interstate-commerce and antitrust acts.

There was, moreover, a deepening conviction that ethical and humanitarian considerations had a vital relationship to economics and that a failure to observe them constituted a continuing menace to social stability. This conviction was, in part, the intellectual contribution made by the socialists, the single taxers, the Populists and other minority groups which refused to admit that poverty was a legitimate

[1] H. D. Lloyd, Wealth against Commonwealth (N. Y., 1894), 497.

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concomitant of progress. On all sides experiments in education, technological training, economic coöperation, the shorter day, better wages, the model factory, better housing, attested the belief that life could be made more tolerable for the masses.[1] But Carnegie's strong man still occupied the saddle. He had fashioned a vast nation-wide industrial order and he had no intention of resigning the kingdom which he had so laboriously prepared.

[1] C. R. Henderson, The Social Spirit in America (Chicago, 1901), chap. viii.

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New page

Gal I

CHAPTER XVI

CRITICAL ESSAY ON AUTHORITIES

PHYSICAL SURVIVALS

Thanks to the attention given in recent years to the preservation of the originals and models of significant inventions, permanent exhibits exist in many parts of the land which help the student to visualize the main stages of technological development in the period covered by this volume. The New York Museum of Science and Industry, established in 1924, shelters collections illustrating the progress of the food, clothing and housing industries, of all forms of transportation, and of the applications of electricity to communication, lighting and power. Among the important originals are the Hammond typewriter (1881), the Parson steam turbine (1884), a Hoe single large-cylinder printing press (1886) and the Welsbach incandescent mantle (1886), ~~and the Duryea automobile (1893).~~ The exhibits also include the first permanent central power house ~~station~~ in the world for the generation of electricity, the Pearl Street Station in New York City, built by Thomas A. Edison and opened on September 4, 1882.

The most complete collection delineating the history of electric illumination is to be found in the Edison Institute of Technology, established by Henry Ford at Dearborn, Michigan. In the adjoining Greenfield Village are shown the original models of Edison's mimeographing machine, his improvements on the telephone,