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FIRST ANNUAL REPORT

OF THE

BUREAU OF STATISTICS

OF

LABOR AND INDUSTRIES,

OF

NEW JERSEY.

EMBRACING ITS OPERATIONS FROM APRIL 1 TO OCTOBER 31, 1878.

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STATE OF NEW JERSEY,
OFFICE OF BUREAU OF STATISTICS OF LABOR AND INDUSTRIES, }
TRENTON, October 31st, 1878. }

To His Excellency George B. McClellan, Governor:

SIR—In accordance with the law passed at the last session of the Legislature, approved March 27th, 1878, I have the honor to present the first report of the Bureau of Statistics of Labor and Industries.

JAMES BISHOP, *Chief.*

INTRODUCTION.

The Legislature of New Jersey near the close of its last session passed a law creating a Bureau of Statistics upon the subject of labor, and in accordance with the provisions of said law my name was sent to the Senate on the first day of April by the Governor—George B. McClellan—as a suitable person to take charge of the same. This nomination having been confirmed by the Senate, on the second day of April I received a commission from the State of New Jersey authorizing me to enter upon the duties of the office.

As the law required the Chief of the Bureau to have his headquarters at the State House it became necessary to have a room provided and fitted up for that purpose, and it was not until May that proper facilities were furnished to begin the work of organization.

The first duty was the selection of a suitable person as assistant; and, as the law required the concurrence of the Governor and Comptroller in the selection, after consulting with those gentlemen, Mr. Samuel C. Brown, of Trenton, the recent President of the State Centennial Board of Commissioners, who in that position had done much to bring our varied industries before the public, was appointed.

In this connection I must in justice to Mr. Brown, acknowledge the invaluable service he has rendered in the preparation of this report, as well as his deep interest in the general work of the Bureau.

It is required by law that the head of each department of the State shall on the 31st day of October in each year make a full and detailed report of his office for the current year; therefore only six months of the present year remained in which to organize the Bureau and prepare such report.

The limited appropriation made in the law did not authorize the employment of competent agents to obtain statistics by personal application, and it became necessary to resort to the very

unsatisfactory method of issuing blanks for that purpose. It will be seen by an examination of the report, in which the very meagre returns sent in will appear, that the experience of all statisticians is again confirmed in this case, and the conclusion is irresistible that truly reliable statistics can only be obtained by individual effort.

The first circular issued was dated May 1st, 1878, and as it stated briefly the objects contemplated by the law, it was extensively circulated with the hope that as it invited correspondence and solicited "interviews with employer and employee in all departments of labor throughout the State," there would be an interest awakened which would draw out valuable information with regard to these subjects; but, for reasons which it is to be confessed are beyond our comprehension, the appeal met with scarcely a response.

It is to be feared that the citizens of New Jersey are not fully awake to the value of well prepared statistics of the industries of the State and the benefits to be derived therefrom in the development and utilization of its varied sources of wealth. In many of our sister States the people are becoming fully aroused to the importance of Bureaus of Statistics that they may thus meet the demands of labor and by every possible means develop their latent resources. Massachusetts has nobly led the way; and whoever will examine the "Census of Massachusetts" for 1875 will find in those volumes a most complete and exhaustive report of the industries of that State. The Bureau of Statistics of Labor in that State has reached the tenth year, and its importance and value is now generally conceded. Connecticut, Pennsylvania, Ohio and Minnesota have established Bureaus, and in many other States the question is now being earnestly discussed.

I am well aware that from some of the leaders of labor organizations, and even in a few instances from workingmen themselves there has been, and for a while there may continue to be, suspicion and distrust lest this Bureau should be suborned to some purpose outside of the objects named in the law creating it; but all may be assured that while under its present control no extraneous questions will be allowed to interfere with the single object of advancing the material interests of all classes of

population, and especially the elevation by every legitimate means of the wage-laborer.

We desire the co-operation of all men of all occupations and of all classes, and appeal to all to place themselves in sympathy with the Bureau, and thus unite with it in carrying out the objects contemplated by the law. It is to be hoped that rich and poor will alike lay aside prejudice and pride; and by determined, united, and persistent effort—under the inspiration of pure philanthropy and State pride—unite in devising and carrying out such plans as shall place New Jersey in the high position to which both by her geographical location, and through the energy of her citizens she is so justly entitled.

While I have been compelled in this report to allude to the suspicion and indifference manifested both by employers and employees, there have been individual exceptions among both classes; and, though few in number, the earnestness with which those few have entered into the work affords both hope and encouragement for the future.

It is a pleasure to mention the names of the few gentlemen who have contributed articles for this report; and they are assured that their interest thus manifested in the work is duly appreciated.

John W. Snowden, M. D., has prepared a paper upon the Climatology of South Jersey; J. Ingram, M. D., of Vineland, a report of Weather at Vineland for ten years up to January 1, 1877; and J. H. Brakeley, M. D., a paper on the Cranberry Interest of the State.

JAMES BISHOP, *Chief.*

CHAPTER I.

Considerations Regarding Labor.

THE

EDUCATION AND WELFARE OF LABORERS.

NOTATIONS IN RESPECT TO BLANKS.

EMPLOYMENT AND SCHOOLING OF CHILDREN.

CHAPTER I

Constitutions Regarding Labor

Education and Welfare of Laborers

STATUTES IN RESPECT TO BLAKS

EMPLOYMENT AND SCHOOLING OF CHILDREN

CHAPTER I.

CONSIDERATIONS REGARDING LABOR, AND THE EDUCATION AND WELFARE OF LABORERS; NOTATIONS IN RESPECT TO BLANKS; EMPLOYMENT AND SCHOOLING OF CHILDREN.

This Bureau was created by a law passed at the last session of the Legislature, which contemplates the obtaining of statistics relating to all departments of labor in this State, and in all suitable and lawful ways to foster and enlarge our manufacturing and productive industries.

The questions relating to labor take precedence of industries in the framing of the act constituting the Bureau, hence it is proper that they should have priority in the duties of the officers appointed to conduct the investigations of the department.

It was anticipated that our endeavors in the line of statistics regarding labor in all its complex relations, would meet with more or less obstacles, for there seems to be an innate disinclination existing throughout society to reveal information for any purpose which uncovers one's private interest and absolute condition. The possibility of such revelations resulting in good to those from whom they are sought, does not often render the work any the more easy of accomplishment. This has been the experience of all authorized to undertake statistical labor, not only in our own country, but in all other countries, and we were thus prepared at the outset, for impediments and disappointments.

But when we feel assured that our disquietude and anxiety thus occasioned, is not a precedent in all probability, for future investigations, we can pursue unfalteringly the work we have in hand with hopefulness and cheer.

It is not to be anticipated at the incipient stage of revolution-

ary movements, that the methods chosen will in all cases have the sanction of those who may be expected and relied upon to participate in their prosecution.

The entire *subject of statistics* is one about which there is no little diversity of opinion in all communities and classes. Every year, however, the divergence of sentiment in respect to their varied utility to promote important public and private interests is growing narrower, and their subserviency to advance the science of political economy more apparent.

There is need of the *utmost thoughtfulness* on the part of all, and especially of those who have the capacity and beneficent inclination to deal judiciously and emphatically with the complex problems connected with labor, and with the welfare of the laboring classes.

It is neither wise nor consistent with even ordinary principles of humanity to assume an attitude of cold indifference to the practical concerns of the great bulk of the human family, who are in a marked degree dependent upon the minority. This ordained dependence imposes vast responsibilities upon the State, inclusive of what is denominated the upper classes, whose essential interest cannot by any process of reasoning be disconnected from those of the labor classes. It has been wisely ordered that the predominant interests and general welfare of society are not committed to the custody of either class disassociated from the other. The upper class is indispensable to the lower, and vice versa. These are non-debatable and well understood propositions, but existing class alienations and antagonisms indicate deplorable misconception and ignoring of clearly defined principles of reciprocity which, in their consequences, jeopardize, in a large degree, the prosperity of all classes.

How much more hopeful would be the aspect of the relations between capital and labor if, at the present juncture, instead of observing an increasing lack of harmony between employers and employees, we could discover an abatement of the spirit of hostility. If either one of the parties could be acquitted of responsibility for the present state of things, the pacification would thereby be rendered less difficult. The adjustment of differences will not be achieved by the manifestation of any other spirit than is reflected in mutual concession.

It would disembarass the discussion of the many questions growing out of the relations of labor and capital if passion and class-prejudice could be dispossessed of their sway. The real merits of the controversy are rendered almost invisible to the multitude by voluble, unreasoning agitators, who fail for the most part, to comprehend the true and rational source of discord, and thus do great injustice to the labor classes who have the highest claims upon the public regards, and whose present unprosperous condition is calculated to awaken the deepest sympathy in the minds of those who have the well-being of the state at heart.

It is no doubt true that a large majority of the laboring classes would avail themselves of the opportunity for social and material advancement if it was presented; and who will maintain that this elevation, in the social and educational scale, is not a desirable consummation? The culture of the mind and the acquirement of a practical industrial education, accompanied with abstemious and industrious habits, must be recognized by all classes and grades of employers as desirable attainments, tending to vastly enhance the value of the services of such employees. Educate the laborers and social elevation will, in most cases, be an assured accompaniment. Secure to him by law equal protection of his rights with his capitalist-employer, and each swayed by a predominating sense of justice between man and man, and you have a sure basis for undisturbed harmony and prosperity.

Class distinctions are universal, and are traceable back through all civilizations, and they must be regarded as permanently engrafted upon our social system. Other nationalities have been confronted with varying forms of conflicts resulting from fancied or real inequalities regarding the distribution of the rewards of labor. It is affirmed with truth, that in other countries there has been progress towards emancipation from the evils practically the same with which we are suffering to-day. If social amelioration and reforms in the interests of the labor fraternity are practicable under less favorable auspices, it may fairly be assumed that this nation will sooner or later be likewise liberated, but a resolute and all-pervading self-enforcement of the principles of reciprocal justice and fair dealing must precede the consummation.

The exemplification of unselfishness and generosity in business as well as in social circles, is imperative in all ranks and classes of men. These may be classed among the inexpensive virtues, for their practice, in the present employed sense, has no special pecuniary significance, but chiefly the habitual observance of the principle of reciprocal equity.

In ordinary daily intercourse with our fellow men—but emphatically in the relations of employers and employed—the substitution of a true unselfishness in the adjustment of recurring differences, for an insatiable predisposition to absorb an undue share of advantages, would discountenance and repress very materially the tendency to injustice.

Referring to the same subject, “Irenæus” says: “The remedy, then, is in great part moral, as Christian people we have a work to do in restoring the tone of better days. The heavenly virtues of temperance, industry, honesty and prudence are to save us, not new laws, not new mines nor wells, nor politics, but the hard school of patient, steady perseverance in well doing, this and this only.”

There has been in the last few years, a vast deal of unnecessary and unfruitful discussion of questions very closely allied to individual and industrial prosperity. Labor and capital are so essentially dependent upon each other in the successful prosecution of business enterprises, that comity and equity would seem to be among the primary requisites which mutual interests would seek to engraft upon their associative relations. There is nothing that will so effectually tend to harmonize and unify existing divergencies between capital and labor, as to *raise the standard of labor*, and by educational processes, render the laborer's services so essential to his employer that they will of necessity be considerate of each others interest and welfare. When you establish an affinity of interest between employers and employees, you diminish the chances of discontent and disruption many fold. If this assumption is sustained, then laborers and artisans in a very important sense are custodians of their own life-long destiny.

It is the duty of the State to furnish educational appliances appropriate and adequate for the varied needs of every industrial and mechanical pursuit. And it is equally the duty and interest of every

working man who has an aptness and desire to become an expert artisan and skilled laborer, to avail himself of every opportunity to do so.

Trade schools have been one of the chief instrumentalities employed throughout Europe to build up and enrich European countries. And so long as we omit to adopt and introduce them into our educational system, so long will we maintain an unequipped contest for supremacy in the diversified industries of the world.

There is great necessity for persistent effort in this direction, and the writer deems it proper that this remaining and indispensable need of our country and State should be pressed upon public attention on every suitable occasion.

“Our State can only become wealthy and prosperous, and our people can only attain a maximum of comfort and of independence of commercial and social changes, by developing, to the greatest possible extent, our agricultural and mineral resources, by taking fullest advantage of our unusual facilities for building up manufacturing industries, and for reaching the great markets of the United States and of the world, which are due to those peculiarities which mark the geology and topography of the State to its location on the great highway between the East and the West, and to its position between the two great cities of the seaboard.”

“These things can only be accomplished by carefully and thoroughly preparing our youth to enter upon their work with intelligence, knowledge and skill, and by encouraging and promoting by every possible means, the diversification of our industries and the introduction of new kinds of raw materials, the manufacture of new products and the cultivation of every branch of industry in which fineness of work, refinement of taste and a display of peculiar ingenuity and skill are rewarded by high prices in the market and a good demand.”*

The public welfare technically is under the guardianship of the National Congress and State Legislatures, but it is the prerogative of the people nevertheless to do everything that is legitimate and expedient in their individual or associative

*Report of the N. J. State Commission appointed to devise a plan for the encouragement of Manufactures of Ornamental and Textile Fabrics.

capacity to improve the physical, mental and moral condition of those whose comfort and happiness are so largely dependent upon industrial prosperity. Our own State has hitherto given but little attention to legislation specifically in the interest of this numerous class. This inadvertence to concerns of great moment to the class we have under special consideration at this time, may perchance be atoned for in the future.

There are diverse subjects relating to the welfare of the laboring classes, which no doubt, will from time to time engage the deliberations of our State authorities. Those who are most clamorous and hopeful of having their grievances speedily removed through legislative action, do not accurately gauge the prerogatives of the body they appeal to. While its efficacy may be relied upon to considerable extent, too much must not be expected from that quarter; at all events until more authentic information relating to the department of labor in the State, especially in its relations to the "industrial, social, educational and sanitary condition of the laboring classes," is in our possession.

The instrumentality of similar State Departments to this for acquiring truthful and comprehensive statistical information that will assist in determining what measures are necessary, both of a public and private nature, to improve the condition of the laboring classes, has been recognized in this and in other countries as the most effectual of any hitherto devised.

No one will deny that the laborer has full liberty in all proper and lawful ways to seek to improve the condition of his class, and impartial and sensible men must see that there is need of both physical and mental improvement, but the methods and agencies through which it is to be effected, are still absorbing and undetermined questions.

It is manifest that the intervention of the legislature will come far short in authority to meet every phase of the present labor troubles. There is but a limited number of subjects which can properly engage its attention in this trying emergency, but still enough if wisely acted upon to remove some irritating sources of discontent.

One of the most important subjects demanding the attention of the legislature is repeatedly referred to in this report. It is

that of industrial education for adults as well as youth, and the public school education of the children. We can recall no period when the latter was not a recognized and pretty generally enforced necessity in every community. But the former has quite recently forced itself upon us as a question of the greatest moment, and not to be evaded without infinite peril to the productive industries of this country.

It would be supreme folly for our people, through inadvertence or want of accord upon this subject, to practically take a back step in the consideration of social and industrial progress, which inaction would surely be interpreted to mean. Having amazed the world in the last decade by our robust energy and unexampled achievements in industrial and commercial progress, can we afford to be passively indifferent to continued effort in the same direction, when irresolution would be most perilous alike to industry and commerce, and more than all else, to the future welfare of a multitude of worthy men and women, wholly dependent upon the extension and prosperity of those two interests?

In the last ten or twelve years there have been such fluctuations in most departments of industry as greatly to disturb and modify not only the pursuits of industry, but to unsettle and derange the laborer and curtail his opportunities to gain a livelihood. The period has been notable for progress and magical achievements in the line of mechanical inventions, and to this cause has been truthfully ascribed our industrial overpluss, and this again has displaced and forced both skilled and unskilled labor into channels for which a lack of appropriate education and training unfitted it. This peremptory recourse to new occupations was very detrimental to the interests of labor, and rendered the outlook for the laborer very unpromising, and no essential change for the better is yet realized, although there is much reason to believe that good times are not very remote.

It cannot be questioned that education for the masses is the most obvious need of our time and circumstances, and it is hopeful to perceive that this conviction is daily gaining strength. It is quite as important that its necessity should be impressed upon the parents of children who are to pursue the labor calling, as upon those who are to furnish employment. We have had such a

protracted period of depression and attendant want of remuneration of labor, that parents have got very much into the habit of thinking that even the common school education is of less value to their children than their small earnings in factories. Necessity is the first law of nature, and our experience in the last few years of unrequited industrial labor, forbids very harsh judgment to be passed upon parents with large families, who have, in many cases from sheer necessity, been compelled to send their girls and boys into the mills instead of the schools. It is a direful compulsion, and should be obviated at an early day.

We would not be understood as intimating that this want of consideration on the part of parents for the best interests and future welfare of their children, is wholly an outcome of the present slack times. Unfortunately the interests of both parents and employers sometimes concur in this regard, and even in the most prosperous times, with apparent unconcern for the health and development of their children, they consign large numbers to the close and protracted confinement in impure atmosphere, which everybody knows to be incompatible with youthful vigor and healthful development. It is manly and womanly health, too, that is thus sacrificed as well as the only less valuable educational possession, for children subjected at this early age to such unwholesome influences, as a rule, cannot be expected to become robust men and women. Parents cannot too soon learn that this policy dwarfs both body and mind, and in the end it is the worst kind of economy to thus make even the rudiments of education secondary to the scanty earnings of their young children in mills.

In the absence of statistics upon this subject, it is undoubtedly true that there is a much larger number of children in our cities and manufacturing towns, growing up in total neglect of public school instruction, than is generally believed. The ordinary sources of information in reference to the condition and welfare of the children of the laboring classes fail to elicit the truth.

Governor Washburne, of Massachusetts, says: "A hasty glance at the condition of the children of these classes in many of our large manufacturing communities, is sufficient to convince the most sceptical that important changes are imperatively demanded as soon as they can be brought about. The assump-

tion of our laws is, that the highest intelligence is the highest good of the entire people. Ignorance is dwarfing to the individual, and dangerous to society. It is wiser economy to sustain the common school than the reform school, the normal school than the house of correction, the college than the penitentiary. The State assumes that the physical, mental and moral treasures embraced in what we call childhood, are so much capital belonging to the community as well as to the parents, and it has been well said that the State undertakes to provide for, invest, develop and look after this childhood treasure, in such a way that it shall pay the highest dividend to the Commonwealth."

Previous to the establishment of the Bureau of Statistics in Massachusetts, the public was misinformed in regard to the deplorable condition of the children in that State.

In referring to this fact, Gov. Washburne also says: "But a closer and more thorough investigation reveals a state of things that I did not suppose existed. I find many thousand children in our crowded cities and manufacturing establishments, who never enter a school room, and are growing up without even the rudiments of what we call education."

The last school census of this State shows that we have 318,378 children between 5 and 18 years of age. It also shows that there are 72,389 of the above number who attend no school whatever.

Without some explanation this would be a startling fact. There are unquestionably a large number of children between 5 and 6 years of age who do not attend school, and it is probable there are also a great many between 15 and 18 who, for various reasons, do not attend school. Some consider themselves too old, and others regard their education as "finished" at 15. No doubt the explanation given would very materially reduce the total reported as being non-attendants of school, and other causes which we cannot enumerate now, would reduce still more the probable number who are receiving no school education.

We learn too from the same source that there is in the State 37,057 children and adults WHO CANNOT READ; and 54,687 WHO CANNOT WRITE. It is quite remarkable that of the latter number our native population predominates—24,961 being foreigners, and 29,726 natives.

Assuming that there is a larger number of children and adults

in New Jersey who misimprove their opportunities for acquiring an education without cost to themselves, it would not accord with a becoming regard for the public welfare and the material interests of the State, when the truth is fairly disclosed, for State authorities to omit to apply a remedy for such a growing evil.

Before we make direct reference to the somewhat unsatisfactory tables we present as the result of our first efforts in the investigation of subjects chosen because of their obvious and conceded importance, it will not be out of place to show that our initial experience was not unlike that of others charged with similar duties.

The acquisition of statistics through the agency of organized departments, must necessarily be attended with similar methods, and upon kindred subjects of inquiry, the results would naturally bear an approximate resemblance. The General Government has always maintained a Statistical Department at Washington, but State authorities have only quite recently begun to recognize their importance. In Europe their sufficiency in public regards has been apparent for many years, but it is quite singular that, while England has done very thorough work in the line of investigation of subjects connected with labor under parliamentary authority, it has been through an endless number and variety of commissions. Throughout the continent distinct central bureaus prevail, and with vast usefulness in their respective countries, so it would appear that we have adopted the central system of the continent, rather than the commission system of England.

To show that *our* system is awakening attention in England, we quote from a recent writer who is a prominent statistician in that country: "It seems almost incredible that an old industrial country like Great Britain should be without a centralized organization of statistic of labor. In America bureaus are established in Washington, Massachusetts, Connecticut, Pennsylvania, etc., and judging by the valuable information annually given to the public through these agencies, these departments give good satisfaction, not only to employers and workmen, but also to the general public, whose interest after all is of the first importance in all questions affecting labor and the condition of workmen."

We will make a single reference to responses made in England upon one subject, to indicate the disposition there to further the purposes of parliament in the appointment of commissions for special work. The subject of inquiry in this case related to the payment of laborers by orders on stores owned by the employers, and 45,125 questions were asked and an equal number of responses received.

Some reference to the early experience of the Massachusetts Bureau in investigating operations will be pertinent, in advance of our own showing of results in almost the identical line chosen for their first schedule of interrogatories. The Massachusetts Bureau has just entered upon its tenth year of labor, and its success in the department of which it is the acknowledged head, is attested in both hemispheres.

Our blanks No. 2 and 3, addressed to employers and employees, contain a less number of questions than those issued by the Massachusetts Bureau in 1869, but in their general scope and relations to the condition and experience of the working classes they were designed to elicit information of similar import. The parallelism extends also to the limited period in which the materials for the respective reports was to be collected, viz.: six months.

The time was not only short, but the work was to be prosecuted under the serious disadvantage of being new to those in charge, as well as those from whom the information was to be obtained. In most cases the schedules were the messengers to acquaint the recipients even with the establishment of a department, the purpose and scope of which was unknown to most of our citizens, whose attention had never been specially attracted to institutions of this kind.

The law under which this bureau was established, imposed upon its officers the duty "to collect, assort, systematize and present in annual reports to the Legislature, on or before the last day of October in each year, statistical details relating to all departments of labor in the State, especially in its relation to the commercial, industrial, social, educational and sanitary condition of the laboring classes," etc. It will be noticed that this is a formidable catalogue of subjects for investigation. The method

of procedure was to be determined by the officers in charge of the department.

In this country it has never been thought expedient thus far, except on special occasions, to confer upon officials charged with the duty of collecting statistical information, the authority to coerce attendance and responses in the discharge of their duties, but to rely upon the voluntary principle under the sway of common sense and a regard for essential public interests. The indications are that there will be no occasion for a general resort by State authorities to a compulsory process as in England, for the mass of our people are conservators of the public welfare, and have an ardent solicitude in behalf of the rights and interests of all the people, which will, in every emergency, compel them to sanction and promote methods of reform designed for the public good. And this leads us to conclude that, while in Massachusetts, Pennsylvania, Ohio and elsewhere, at the outset of these organizations there was an apparent lack of interest in their statistical work, it arose in a great measure, from the absence of correct information regarding its general significance and utility. Just here we can, with great propriety, reiterate that New Jersey is lamentably deficient even in the ordinary locally-arranged statistics, which are less neglected in other States. We have recently been applied to from Washington and one of the Western States for information of this character relating to our industries, &c., which we could not supply.

The Massachusetts Bureau issued in 1869, the first year of its organization, twelve hundred and forty-eight blanks to employers, and received, with replies, two hundred and seventeen, or about seventeen per cent.

In Ohio the bureau issued also, in the first year of its work, ten hundred and twenty-one blanks, and received in return four hundred and five, which is about forty per cent.

This bureau issued fourteen hundred and fifty to employers, and one hundred and six were returned, being seven per cent., and the number issued to employees was twenty-nine hundred, and the number returned, more or less completely filled up, was two hundred and ninety, or ten per cent.

In justification of our complimentary and hopeful prediction in reference to future success in this special branch of statistical

labor, we take occasion to refer to the remarkable result of canvassing operations in Massachusetts in 1875, which constitutes the most complete and extended contribution in the line of statistical work relating to labor and capital which any country has ever produced, and the department which attained such success is surely entitled to the implied commendation contained in the following extract of the report of the Board of Supervisors of Statistics to the Massachusetts Legislature at its last session :

“ It is because this commonwealth has endeavored, along with her other educational forces, to understand the condition of her people, that she occupies the position that she does, and that the reports of her departments are sought all the world over, and are considered the chief sources of information on subjects pertaining to the broad realms of social science in America.”

To indicate the change of sentiment in Massachusetts in reference to statistical work of the bureau between 1869 and 1875, we will state that in 1875 that bureau obtained well-prepared returns from *employers*, showing the yearly wages of 266,339 of both sexes; and in the same series of blanks sent *direct* to *employees* upon wages, 55,515 males, and 15,324 females responded. As a matter of course, the latter returns are embraced in the former, only coming through a different channel. It will add to the interest in these returns to know that they comprise a part of the marvelous census returns of that State for 1875, and they put to shame our wasted and inglorious census returns for the same period, which were consigned to the shades of the State House vaults, with their contents undivulged, except to reveal their worthless character.

It was unquestionably the primary purpose of the early friends of this bureau to make it the medium of intelligence bearing upon all subjects pertaining to every department of labor, and to whatever relates to the condition and welfare of the labor classes, (without whose toil none of our industries could be maintained for the briefest period,) with a view to prescribe such needful legislation as the various researches of the department from time to time suggest. Legislation for specific objects cannot be serviceable in its purpose unless it is based upon truthful and urgent necessity, and it is believed that reliable statistical elucidation for such a purpose is the most potent of any.

The subjects embraced in our No. 1 and 2 Schedules, compass those most material to the welfare of wage-laborers, and chiefly those which are amenable to the ameliorating influences of legislation. While it is not a new experience, we are, nevertheless, very sorry that the subjects we have endeavored to inquire into as judiciously as possible, have elicited so little interest on the part of those to whom we addressed ourselves. We are not disposed, however, to unduly indulge in censure, for there are innumerable reasons and influences to dissuade individuals often from participating in an undertaking which is susceptible of a great variety of interpretations, and in which the adverse reasons for the moment seem to predominate.

We have already intimated that Bureaus which have been established for purposes of statistical investigations are of very recent origin in our country, and that their usefulness to advance important public and private interests is beginning to be recognized and demonstrated, in communities especially where they are in operation and cordially maintained. They have been and will continue to be effective instrumentalities for good, as they are more understood and their capabilities become verified by practical results. Hastily formed misapprehensions often deter individuals from taking rational views of new devices and proceedings, which a little previous knowledge or thoughtfulness regarding them would have obviated. A prevalent objection to some of the queries in our schedule was that they trench on matters with which the public has no concern. Inquietude resulting from imaginary interference with private interests and fancied disclosures of business secrets, has greatly impeded the acquisition of information the Legislature prescribed as among the prerogatives and duties of this department.

To obstruct the operations of the Bureau in the way and to the extent we have indicated, is scarcely compatible with intelligence and a high regard for the interests of a very large majority of our citizens composing the labor classes, whose welfare is identified with whatever partakes of the character of labor and industrial reforms throughout our State and country. No one can be justified from holding themselves aloof from participation in a movement so obviously inaugurated to improve the social and physical condition of said classes, which is to be achieved by

methods involving no encroachment upon the rights, or necessitate any inordinate sacrifices, of the minority. It does not appear to us that there is justification for this disposition to ignore the injunction of the Legislature, upon the ground that the object of this investigation does not justify the means. *We cannot but think there is more or less selfishness at the bottom of this view of our work, in this particular instance, for surely it will not be claimed that the laborers have in any way forfeited their right to full participation with the rest of society, in the legislation of the State, more especially as in the present case, their unprosperous condition, was made the occasion for their becoming largely influential in the establishment of this Bureau.*

The immeasurable evil to the State and nation: the irretrievable and indiscriminate losses: the poverty and demoralization of the working classes, form a combination of results traceable to the interminable labor conflicts, of which there is no parallel in history. By whomsoever and through what instrumentalities, successful mediation between employers and the employed is effected, in magnitude and importance, the achievement will be unsurpassed, and the renown imperishable.

The simplest and most effective solution we think has already more than once been referred to in this report, but its consummation is so far removed from human agency, that we fear it will not be favorably considered by the masses, and so eschewed as impracticable and inefficacious in the present exigency. *It consists in a radical change in the business intercourse between employers and employees wrought by the implanting in the heart of each an ineradicable principle of mutual forbearance, good will and absolute justice.*

Our disappointment from the inadequacy of responses to the blanks we sent over the State is not in the number alone, but in the case of No. 3, there representative character in the aggregate is not what we would choose to have it, inasmuch as it does not comprise a fair average of the diversified occupations in our State. But this omission needs no further criticism at present, for since we have failed to meet expectations in this important branch of inquiry, we have not the material to use, as we otherwise should.

It is difficult to make any effective use of insufficient data upon almost any subject. If the class we most desire to benefit disarm

our efforts by withholding the information essential to our purpose, they, and they only are to blame for it.

The State has equipped a department for collecting comprehensive data regarding the condition of the working man with the view to legislative relief, when that seemed to be the appropriate source from which such relief should come.

We have said already that we would not express undue disapprobation of the course the great majority of employees saw fit to pursue in regard to our interrogatories. It is unquestionably true that in most cases, the veritable reason for refusing to fill up our blanks was withheld from our canvassers, and impromptu reasons substituted. Apprehension of encountering the displeasure of employers has more force to dissuade employees from imparting solicited information touching their social condition and relations with employers, than any other, and we cannot but enter deeply into this unwillingness to thus voluntarily imperil their otherwise secure positions.

The evidence is cumulative to sustain laborers in this attitude of self-defence, and it would seem to be a proper subject of thoughtfulness on the part of employers, whether their best interests would not be subserved by the substitution of a kindly and confidential demeanor towards their employees, for one that chiefly tends to perpetuate distrust and alienation. It must not be understood that we exonerate the laboring classes from sharing with their employers the culpability which has brought upon us this formidable and imperative need of compounding differences. We reiterate that a change of heart, in the sense of mutual forbearance and self-abnegation must supplant all present causes of irritation and bitterness. And at the risk of seeming to be unduly pertinacious in this view, we feel impelled by the most indubitable convictions to maintain that herein lies the incipient and predominant source of the labor perplexity. High authority requires of us "to do justly, and to love mercy."

There are natural rights which inhere alike to employers and employees, and they are equally entitled to the privilege, in all fair and legal ways, to do the best they can for themselves. The employers' interest seems to be in keeping the prices of labor at the lowest point, while the interest of the laborer is clearly in the opposite direction. All know that neither party is independent of the other, although in the adjustment of prices of labor, the em-

ployer, who is supposed to possess capital, has the advantage of the laborer, inasmuch as his circumstances do not compel him as in the case of the laborer, speedily to make the best terms he can. There was an obvious necessity, therefore, for the laborer either to acquiesce in the dictation of the master, or to obtain the means for temporary support while negotiations were pending, from other sources, and this led to unions and combinations to sustain the laborers' cause.

This was the attitude of the two parties many years ago, when trades unions originated with us, and which have since become numerous and powerful institutions, and it is not likely they will be otherwise than long-lived. In Great Britain it is said there are quite two thousand unions, and that at least ten per cent. of the skilled laborers are enrolled among them. In this country the number, of course, is much less, but still enough in number and membership to perpetuate them.

Since these unions are institutions to remain with us indefinitely, and are composed of classes who have rights no less sacred and defensible in justice, than those who sometimes in fact, if not in name, combine against them to depress prices of labor, so long as the deep-seated causes which called them into being are not removed, it is the part of wisdom and of sound public policy for all who do not look with favor upon them, to coalesce in union work of a more exalted character, and with higher aim than simply to advance material interests, viz.: *to elevate socially and morally the entire mass composing the labor classes of our State.* When the execution of this laudable purpose is honestly undertaken, we will guarantee the cordial co-operation of a very large proportion of those for whom such a boon is in reserve. And we feel assured that no other course of action will so soon relieve us, if not of organized unions, of the perpetually recurring anxieties and conflicts which they have hitherto entailed upon us.

We feel constrained to say that, in our opinion, trades unions are not in themselves necessarily an evil. Because they have been instruments of evil, and much malpractice is traceable to them in all countries, it is not wholly due to inherent faults of the system, but to allowing commanding spirits to gain the mastery over bodies of men predisposed to let others think for

them and lead them to do very indiscreet and often very reprehensible things.

We could recount many illustrations rendered familiar to all of us by the necessity of acquiescence in their results, of formidable organized combinations composed of an entirely different class of society for other and equally obnoxious purposes than to resist demands of labor, and which possess all the essential features to render them as distasteful to the public and irreconcilable with justice, as obdurate unionism is wont to perpetrate. The object of the former is artificially to augment profits on no less artificial capital, and the object of the latter is to augment undeveloped or unearned capital of the laboring man. The parallelism in the principles of morality would seem to be recognizable at a glance. In either case the wrong is not in the combination to achieve a specific object unattainable by other than associated effort, but in the non-persuasive, compulsory spirit which predominates and of necessity sanctions coercion in the interests of the minority, to the obvious detriment of the majority. The injustice rests more palpably on the corporation combinations referred to, than on the labor combinations, because of the great disparity between the vast body of consumers made victims, and the small number of capitalist stockholders, benefited thereby.

Amid all the arraignment and denunciation of the working class in the recent years, *it should not be disguised that they have had some very deplorable and untimely examples of immorality and high criminality on the part of men belonging to the non-labor class, set before them, which, while they afford not the slightest semblance of palliation for excesses perpetuated by the other class, they have transpired at a juncture and under circumstances of intense aggravation.* Our reference of course is to betrayers of trusts, premeditated misuse of individual and corporation funds, and unnumbered instances of malfeasance in office, embracing some felons notably high in church and State. In the case of frequent wrecking of insurance companies and savings banks, poor people have seen their earnings stolen, and mercilessly wasted by unscrupulous and improvident officials. It is not to be wondered at that these evidences of demoralization in the higher classes have awakened feelings of intense disgust and alienation among the wage-labor classes, thus victimized.

So much apprehension has been awakened in the minds of both parties interrogated through the agency of our schedules, in reference to the identification of information thereby imparted with its source, that it will be most satisfactory to the officers of the bureau to discover that their first report was the medium of dispossessing such minds of these entirely gratuitous impressions.

If the distribution of the report does not also exculpate the department from other inimical surmises reflected in such greetings of its canvassers as the following: "Spying out the land, and looking to the revival of the income tax;" "Suspicious of your motives;" "Many questions offensively personal;" "Will have nothing to do with your impertinent questions," &c., &c., time will effectually disarm all such ill-conceived pre-supposition.

We feel a confident assurance that whatever future investigations are undertaken by this department it will encounter a very different predisposition in all sections of the State. Our constituency will have discovered that the true mission of this bureau has relations to interests wholly inseparable from those strictly identical with the public welfare. How else could the spirit of the law creating it be complied with.

The value of State institutions must necessarily be gauged by their subserviency to the interests of the State at large. Rigid abnegation of sectional and class interests cannot be too strictly adhered to. Impartiality in purpose and method is essential to gain the sympathy and co-operation of all classes, hence when it is made apparent that those who conduct public departments of this character are capable of rising above partisan dictation and of maintaining an attitude of intelligent indifference to parties and organizations of every sort, they can count upon the alliance and fullest co-operation of the wisest, best and most conservative citizens of the State. Success under such a combination of auspices would seem to be inevitable. The public should become interested under such circumstances and participate in experimental schemes designed for the public good, especially when the feasibility and sufficiency are no longer experimental in other communities.

We have said that New Jersey is greatly in need of more thorough and reliable statistics, certainly in what pertains to her industries. We have reason to believe that many other States which ought not to be, are, in advance of ours in accessible, reliable information on subjects of public concern, and which are becoming of more interchangeable importance in the family of States. Our brief existence has been serviceable in giving prominence to our inability in this regard to return the courtesies of other State authorities.

One subject will illustrate our State's inattention to matters of this sort, which was brought to light by an ineffectual endeavor to ascertain except from the United States census, how many children, not to say adults, there are in the State who can neither read nor write. This is a mortifying omission, and we believe our citizens will have occasion for mortification when truthful statistics upon this subject are given to the public, as we hope they may be at some future time.

The United States census for 1870 furnishes the following statistics of the school attendance and illiteracy in our State:

School Attendance.

Total.	Native.	Foreign.	Male.	Female.	Miscellan'ous
158,099	152,009	6,090	79,320	75,428	3,351

Ten years and over, cannot read, 37,057.

Cannot Write.

Total.	Native.	Foreign.	White.					
			10 to 15		15 to 21		21 and over.	
			M.	F.	M.	F.	M.	F.
54,683	29,722	24,961	2,897	2,546	2,113	2,309	14,515	21,916

Colored.

10 to 15		15 to 21		21 and over.	
M.	F.	M.	F.	M.	F.
432	443	481	551	2,881	3,509

We have no data to indicate either the number, age or condition of children employed in factories. Information in regard to these subjects is of paramount importance, and we will not do our people the injustice to ascribe the neglect we are considering, to a lack of appreciation of education for factory children and working people generally.

It will be observed that our questions relating to the employment of children in mills, and the number of those who can neither read nor write, is less full and satisfactory than some of the others which are less suggestive of moral and legal delinquency, in respect to the physical and moral condition of children. We should have been exceedingly glad had there been no occasion for interpreting the conspicuous evasion of questions from No. 4 to 12 inclusive in employers' blank No. 2, as a virtual admission of injustice to the classes therein represented, and the same exception is applicable, we fear, to the concluding questions from 32 to 39, which are as a rule unanswered. We surely have no wish to indulge in censorious criticism of omissions of either employers or employees in respect to our interrogatories. Our single aim has been to bring together all the facts possible through the medium of circular questions, and let them speak for themselves. But having come short of only reasonable expectations in the amount of information acquired, we think we are in the line of duty when we undertake to solve for our constituents, perplexing questions awakened by inadequate results of our work.

We have been unsuccessful in obtaining to any satisfactory extent, information from employers relating to the employment of children and their attendance at schools; the general condition of employees, and their personal protection from fires, and accidents from machinery, belting, &c. It will be noticed that these are all important subjects of inquiry, and concern the laborer chiefly, and in view of their relations to the safety and future welfare of the laborer and his children, we cannot but regret the scantiness of the information that our schedule has brought us. We are unable to find any law upon this subject in the recently issued volume of revised statutes.

It is noticeable that when those questions relating to the pro-

tection of machinery and belting, and to fire-escapes, could be answered in the affirmative, no hesitation to respond is observed.

The inference would seem to be a legitimate one, that the omission to answer implies neglect in respect to the particular subject of the inquiry.

Our view of this whole subject of legislative investigations into the subject of labor, does not accord apparently with the view taken by those who looked with so much disfavor on our schedules, as practically to discredit the right of the State to seek light upon subjects which have vital relations to a large majority of her citizens.

The blanks we prepared and distributed, surely embrace some subjects about which there can arise no diversity of sentiment in regard to legislative intervention. We are accustomed to look upon our legislators, who are the acknowledged guardians of the public welfare, to legislate for the best interests of their constituents, and the indications, extending to many of the neighboring States, are very hopeful of good results to flow from an increased attention of State authorities to the general condition of productive industries, and to the physical and moral condition of that large class from whom our industrial pursuits derive their chief importance and success.

That the vital productive interests of our State are not to be maintained and enhanced wholly or chiefly by capital or the capitalist, needs constant reiteration, for it is seemingly accepted only in theory by a large number of minds. "The question whether the daily life of a majority of our citizens can be enlarged and improved must not be ignored, and should receive no secondary consideration."

The Legislatures of other States as well as our own, have for the last forty or fifty years considered and acted upon questions which have direct reference to the interests and welfare of labor, and the working classes. Progress in civilization, the extension of commerce and manufactures, and improvements in all industrial pursuits, form a rare combination of subjects for thought, discussion and legislation, which have recently forced themselves upon the public mind with amazing celerity. Transitions in commercial and industrial enterprises succeeded each other with such rapidity, that we can scarcely pause for deliberation in

respect to what will be the next in the series. We would not be understood as intimating that prosperity to all classes is an invariable accompaniment through this changeful period; but we affirm that well-distributed prosperity will be the outcome of the vast achievements in the industrial arts and sciences which have characterized the last few years, provided a spirit of harmonious co-operation pervades all classes and interests.

We have no sufficient data of our own procuring upon which to base a few general comments upon the employment of children in factories under age, but we have no reason to think that New Jersey is any less exempt from non-performance of duty in this regard, than other States and countries. Reliable research into this subject has been frustrated almost everywhere it has been undertaken, and for reasons patent to all.

So long as manufacturers are swayed chiefly by the mere economic aspect of the question of the employment of children in their mills, thereby excluding and subordinating the higher consideration of justice and humanity, enforced legislation will be the only effective remedy for an evil of grave magnitude. The injustice of keeping children from ten to twelve consecutive hours day after day hard at work under all manner of pernicious influences both to mind and body, is wholly indefensible. Neither education nor the slightest recreation is vouchsafed to afford a modicum of palliation for the wrong. There is need of thoughtful and vigorous State action in regard to this special evil. No excess of urgency or activity on the part of individuals and State authorities in behalf of the physical degeneracy resulting from over-worked children, in factories especially, can be displayed.

In some sections of our country it is observable that the barns and out-houses for the occupancy of cattle and horses, far exceed in dimensions, architecture and interior conveniences, the more humble and less pretentious habitations of the family. This excessive partiality for the brute creation is calculated to produce the not very complimentary impression that, with the proprietors of such rural establishments, the welfare of the brute takes precedence of their wives and children. We do not regard these strictures as applicable in any marked degree to New Jersey agriculturists, but it is to be feared there is more or less culpability in all of our rural communities in respect to the subordina-

tion of education and robust youthful development, to benefits derived from inhuman coercion of child-labor. The greatest regard is paid by judicious farmers, to the conditions essential to vigorous, healthful growth and muscular development of all animal life. You seldom see a young colt or steer put to toil until they have attained a maturity adequate to all future contingencies.

Children and youth, during the period of physical and mental development, should be as nearly exempt from exhaustive labor and study as is consistent with their circumstances and destined avocations. The character, degree and period for the acquisition of education, must necessarily be regulated to a considerable extent, by the predetermined vocation of the child. Whatever is to be its calling, however humble, it is best that the education should precede the entering upon the life work. This has always been the practice in the professions as well as in the case of apprentices, and other callings to be assumed in advance of the period of manhood.

But it is not our purpose to prolong the discussion of the education of toiling children in connection with the inhumane and depressing employments, to which such large numbers, during the period of development, are subjugated.

The whole subject is so important in its relations to social and material progress, and to a homogeneous construction of society, that it must be deferred for future consideration, when we may be possessed of more extended, comprehensive and reliable information bearing upon the subject. What has been said will serve its designed purpose, viz., to engage the thoughtful attention of those who have hitherto perhaps failed to comprehend in all their fullness the inherent deteriorating influences upon children belonging to the laboring class, who are doomed to a factory experience as we find it, only in exceptional cases.

If children are put into the factory with the primary expectation of its being their life-destiny, at an age which forbids and renders impossible previous elementary instruction only, what chance have they for ever becoming skilled laborers, except by dint of unusual natural endowments. The highest type of skilled labor is scarcely attainable without a fair amount of education. Then, if the disability arising from excessive physical exhaustion at the outset in life is an accompaniment of edu-

cational deficiencies likewise entailed, the perpetuation of such a system indefinitely, would ultimately relieve us not only of our industrial prestige, but render nugatory all future aspirations in the conflict with other contestants, and incapacitate us even to maintain a respectable industrial attitude among rival nations.

This brings us again to emphasize the need of a system of education based upon the moral and physical nature of the human family, adapted to the condition and necessities of all classes. It is our settled conviction that the only hope of stability for our institutions of government, civilization and industries, lies in intelligence and morality. The basis of these kindred virtues is education, but as this conception is not as deeply wrought in the minds of the masses as its significance and conspicuous bearings exact, there would seem to be a propriety, if not necessity, for having this defective comprehension of an obvious truth, supplemented by coercive measures. We regard the employment of children in any pursuit, without the alternation of education with physical labor, either under the half-time or continuous system of instruction, as a grievous injustice demanding deep consideration, and reprobation wherever practiced.

“[No. 1.]

“CIRCULAR.

“BUREAU OF STATISTICS OF LABOR AND INDUSTRIES,

“*Trenton, May 1, 1878.*

“This Bureau has been organized under the act passed at the last session of the Legislature, the duties of which are defined in the following section :

“2. *And be it enacted,* That the duties of such bureau shall be to collect, assort, systematize and present in annual reports to the Legislature, on or before the last day of October in each year, statistical details relating to all departments of labor in the State, especially in its relations to the commercial, industrial, social, educational and sanitary condition of the laboring classes, and in all suitable and lawful ways foster and enlarge our manufacturing and every other class of productive industry, with the view to their permanent establishment upon a prosperous basis, both to the employer and the employed.

“There is an unquestionable desire everywhere prevalent for authentic and comprehensive information, especially of a statistical character, upon all subjects relating to the varied phases of Political Economy. The reason for this unusual thoughtfulness and thirst for statistical knowledge, is largely traceable to the abnormal condition of the country. No section is exempt from depression and appalling stagnation, and if we may, by careful investigation, be able to determine definitely the causes of

such depression, will it not greatly facilitate future legislation in framing such laws as may expedite the return of prosperity?

"When anxiety and suffering are so universal, from whatever cause, it is obviously the duty of everyone to participate in the endeavor to obtain relief and fortify themselves against a recurrence of similar perils. While political parties and organizations of various kinds are lavish of theories as to the causes of our embarrassments, and are continually proffering panaceas for the prevalent deep-seated ills, labor and capital remain unemployed or unrequited in the ordinary fields of enterprise.

"There is a solution and remedy for most evils when they are sought for through honest and impartial investigation, a result far more hopeful of attainment when prosecuted in the interest of the people at large. It is in recognition of this principle that we cordially invite and urge the co-operation of all classes of citizens who are interested in the labor question, and solicit correspondence and interviews with employers and employees in all departments of labor throughout the state.

"This bureau presents the opportunity for systematic investigation and discussion of all subjects relating to the social happiness, more equitable rewards of industry, and the general elevation of the working classes, and this sufficiently indicates appropriate topics for voluntary correspondence with this bureau.

"It will be the purpose of this bureau, in the various stages of its work, to prepare and distribute circulars appropriate to the subject in hand, and these will, from time to time, be furnished upon application.

"JAMES BISHOP, *Chief.*

The foregoing circular was placed in the hands of all the newspapers of the State and otherwise extensively circulated, chiefly to acquaint the public with the fact that the Bureau was organized and prepared to enter upon its work. It was not specially designed to elicit correspondence and personal interviews, although it opened the way to such as felt sufficient interest in the objects of the new department, to proffer aid and encouragement to those who had undertaken to conduct its operations. But the opportunity was not embraced to such an extent as might have been expected, or as would have imparted hopefulness and cheer at the outset of new duties and responsibilities, of no inconsiderable complexity and magnitude.

We take pleasure in giving to the public the following letter from R. H. Manning, Esq., of Jersey City, received in response to the above circular. Its general spirit will be recognized as in full harmony with the sentiments expressed in the body of the report.

"JERSEY CITY, July, 1878.

"As your circular invites voluntary correspondence, I venture a few words not with the idea of saying anything new on the

questions you are attempting to elucidate, but with the hope of strengthening the conviction (perhaps not very widely entertained) that the only way of permanently improving the condition of the laboring classes is through their moral and intellectual enlargement.

“At the close of the war, and down to 1874 the industry of the country was fully occupied and its productions greatly increased by new methods and improved machinery ; so that on the opening of that year, not only the waste incident to the war had been repaired, but a large stock of almost all manufactured articles had been accumulated, The financial crisis of the latter part of 1873 was but little more than a scare, yet it was sufficiently severe to embarrass and stop the less remunerative enterprises, and the process of arrest has gone on to the present time, till only such concerns as are operating under very favorable circumstances can live. Now the spectacle is presented of a community burdened with a superabundance of every kind of wealth and with the means and appliances for producing wealth greater than the world has ever seen before. Granaries are bursting with food ; warehouses are crowded with merchandize ; the means of transportation never so ample ; yet the cry comes up from every quarter of suffering from want of employment, or of the wages which employment would give. It is evident enough that the problem is *not* how to produce more, but how to distribute more equitably :—how to increase consumption by the many, so as to make room for more production.

“Skilled laborers when well employed can, and many of them do lay up a part of their earnings, but unskilled, that is, the greater part of the laboring class are compelled by competition to accept wages which barely afford subsistence. They consume as fast as they earn. Without work they have a tax on the more fortunate or thrifty. Under present systems this class must continue to increase ; for the tendency in agricultural, mechanical and manufacturing industries is to substitute machinery for hand labor and to concentrate production under the control of capital ; and this increases the power of the capitalist more and more to amass the surplus productions of labor into his hands. It is the fashion of the economists to affirm that the interests of labor and capital are harmonious, that there is no

conflict between them. This is true only in a limited sense. It would be true to say there is necessarily none between the laborer and the capitalist, at least none on the part of the capitalist. But that the interests of capital and labor are not entirely harmonious is manifest from the jealousy with which labor agitators regard capital; and more conclusively from the simple statement that so much of the product of labor as goes to the remuneration of capital leaves so much less for the producer—the laborer. The *rate of interest* is the measure of power of the trader, the middle man, the operator or speculator to tax labor, leaving out the question of risk of loss, which comes more legitimately under the head of guaranty.

“As the rate is high or low the contribution of labor to capital is more or less. Of course a reduction of the rate of interest, other things being equal, will be favorable to labor, but it seems almost self-evident that anything short of a reduction to a rate which will but cover the risk of loss will not check the tendency of wealth to accumulate in the hands of the few; so long as the competitive system of production is pursued, wealth will be more and more produced in excess of consumption and accumulate in the hands of capitalists. Periods of employment and of enforced idleness, of revulsions and suspensions will continue to follow one another; so the conflict or diversity of interests between capital and labor will continue and probably increase. Capital can afford to wait, labor cannot, therefore, if labor accepts employment from capital it must accept it on such terms as capital may offer. Legislation can hardly help the matter. It is more likely to disturb natural and inevitable processes than to promote prosperity, though judicious legislation is one of the factors in social development.

“After all, there seems to be no way but for the laborer through faith in his fellows and by honest and intelligent co-operation to become his own capitalist and to work out his own material and social salvation; and nothing for the philanthropist, the economist, and the statesman to do but to promote in every way the moral and intellectual elevation of the people as the necessary basis of such co-operation. This looks like a long road to travel. Is there any short cut to any good thing in human progress?”

We have already made reference to our interrogative circulars, and more than hinted at the absence of a spirit of fraternal cooperation on the part of those to whom the interrogatories were addressed. In the preparation of the schedules our best judgment was called into exercise, both in respect to the subjects and the form of arrangement and expression. They were designed to place in our possession important information for future use in the interest of both employers and employees. We must again express regret that results are so inadequate and unsatisfactory.

NOTES EXPLANATORY OF TABLES.

TABLE No. 1.—There were fourteen hundred and fifty blanks with the heading, "Blank No. 2 for Employers," distributed through the State among those who employ labor in various industries, in order to reach as nearly as possible, the true condition of the wage-laborers in New Jersey.

In many cases the principle owner or manager of the firm, or company, was applied to and urged to have the blanks properly filled up and returned to the bureau, in order that statistics might be obtained showing the present status of each industry as well as the condition of those who were in any way connected with that industry

Notwithstanding all our efforts, only seven per cent. of the blanks issued were returned to the bureau; but from the comparatively small number returned, there were sixty-four industries represented, and these will be found classified as stated in this table.

TABLE No. 2.—This table is also compiled from Blank No. 2 for Employers, and is intended to show, in addition to the nationality of the employee, the condition of children engaged in factory employments. It must be confessed that the returns are very meagre in comparison with what they should be. There seems to be great reluctance voluntarily to furnish information with

regard to children, especially as to the facilities furnished them for education.

TABLE No. 3.—This table is designed to give the highest and lowest day wages paid in the manufactories represented, in the years 1877 and 1878, to show by comparison, the real condition of labor at these two periods.

TABLE No. 4.—Is compiled from "Blank No. 3 for Employers," and will show the prices received for labor from each industry as classified.

When more than one return was received for the same occupation, the highest and lowest wages are given; but to reach the average day wages paid, the gross amount is ascertained, and computation made from the whole number of laborers represented by the blanks. The highest and lowest earnings for the year 1877 are also given, as well as the hours of labor, and the number of days lost. It will be observed that the time lost shows an average of forty-nine and one-quarter days to each person employed, which will explain the very small earnings in many cases for the past year.

TABLE No. 5.—This table is designed to furnish as nearly as possible the family expenses of the class represented. The number of persons in the family being given, and the amount of earnings as well expenses stated, it will be seen how large a number of persons are living in excess of their income.

TABLE No. 6.—Is made up from Blanks Nos. 2 and 3, it having been found necessary to make use of both, in order to reach with any degree of accuracy the children employed in the various industries represented. The hours of labor of these children as well as the rate of earnings is given, to the extent of the information conveyed by the blanks returned. But it will be observed that the attendance of these children upon schools, has been practically ignored.

The following circulars, No. 2 for employers, and No. 3 for employees, were prepared and circulated chiefly through the medium of canvassers, and as generally through manufacturing districts as was practicable.

And here we will take occasion to say that owing to the very limited appropriation, \$800 for the current expenses of the bureau, the work of canvassing was greatly embarrassed and circumscribed. To do effective and thorough statistical work of this nature, canvassers for the most part have been found to be vastly the most serviceable and satisfactory, in other well trodden fields. It was only by the utmost stress that even our meagre results were achieved. We shall hope to have our future efforts seconded by much more adequate legislative encouragement.

[CIRCULAR No. 2.]

“STATE OF NEW JERSEY,

“BUREAU OF STATISTICS OF LABOR AND INDUSTRIES,

“Trenton, May 20th, 1878.

“DEAR SIR:—The Legislature of this State at its last session, passed an act authorizing the establishment of this bureau. The following section clearly defines its special objects and duties :

“2. *And be it enacted,* That the duties of such bureau shall be to collect, assort, systematize and present in annual reports to the Legislature, on or before the last day of October in each year, statistical details relating to all departments of labor in the State, especially in its relations to the commercial, industrial, social, educational and sanitary condition of the laboring classes, and in all suitable and lawful ways foster and enlarge our manufacturing and every other class of productive industry, with the view to their permanent establishment upon a prosperous basis, both to the employer and the employed.

“The purpose of the accompanying interrogatories lie upon their surface, and it is to be hoped there will be no disposition manifested from any source to withhold the information they have been devised to elicit.

“The establishment of this bureau has for its primary object the advancement of the material interests of the State, a proposition so comprehensive as to leave no single individual or occupation in any section of the State uninterested in its successful prosecution. Hence it is believed that, if judiciously conducted and harmoniously participated in by those whose interests it aims to promote, good results will flow from it. ✓

“Fullness and ACCURACY of details are earnestly desired, as the information thus derived will form the basis, to a large extent, of the first report to the Legislature, which, pursuant to a general law, must be completed in October.

“It will be expected that the responses to this circular will be the result of personal knowledge and experience incident to the special branch of business in which you are engaged.

“JAMES BISHOP, *Chief.*

"N. B.—To obviate misapprehension, we append the following explanations:
 "The word 'adult' means any person above fifteen (15) years of age.
 "The words 'child' and 'children' embrace all under fifteen years of age.
 "The word 'native' applied to children, means those born of American parents.
 "The word 'foreign' applies to any person born of parents not American, whether born within or without the United States."

"STATE OF NEW JERSEY,

"BUREAU OF STATISTICS OF LABOR AND INDUSTRIES,

"Trenton, May 20th, 1878.

"BLANK NO. 2 FOR EMPLOYERS.—[This blank is sent as printed matter. On its return, with written replies to the questions, it will be chargeable with letter postage. A pre-paid envelope, duly directed, is therefore sent with it, in which please enclose the blank and return by mail to this office within sixty (60) days.]

- "1. Name of firm or company.....
- "2. In town of.....
- "3. Articles manufactured.....
- "4. Number of persons employed. a. Men.....b. women.....
c. boys.....d. girls.....e. native.....f. foreign.....
- "5. Number of children under ten years of age.....
- "6. Number of adults that can read and write.....
- "7. Number of adults that can neither read nor write.....
- "8. Number of children that can read and write.....
- "9. Number of children that can neither read nor write.....
- "10. Whether an evening school is kept in your vicinity.....
- "11. If yes, number of weeks.....; evenings per week.....; hours per evening.....
- "12. Number of persons in your employ attending.....
- "13. Actual time of starting and stopping motive power.....
- "14. Whether your employees work *extra* time, and what number.....
- "15. Have your employees work nights.....
- "16. Salaries of treasurer.....agent.....superintendent.....paymaster
.....clerks.....
- "17. Highest and lowest day wages of a man.....a woman... and a child.....
- "18. Highest and lowest day wages of a man.....a woman.....and a child...in 1877.
- "19. If during last year you have run short time, how many days lost.....
- "20. Aggregate day wage earnings on full time for men.....women.....children
in 1877.....
- "21. Aggregate piece work earnings on full time for men.....women.....children
in 1877.....
- "22. What per cent. of reduction of wages (if any) has been made of employees'
wages during the year 1877.....
- "23. What has been the per cent. of reduction since 1872.....
- "24. Has there been a strike among your employees during the year 1877..... If
so, give date.....cause.....duration.....result.....and average loss
in wages to each striker.....
- "25. Do you employ *apprentices*.....and how many have you under instruction.....

- " 26. Average wages paid *apprentices* per week for first year.....second year
.....third year.....fourth year.....
- " 27. Are wages paid weekly or monthly.....
- " 28. Are wages paid in cash, or part in cash and part in store orders.....
- " 29. Have you a general store connected with your establishment, at which employ-
ees are expected to trade..... If so, do they purchase with cash.....
with check.....or on book account.....
- " 30. What percentage of profits do you add to goods sold from your store to em-
ployees.....
- " 31. Have you ever known instances wherein an ordinary operative earned a com-
petence, or was enabled to retire at fifty years of age on moneys earned as a
wage labor.....
- " 32. Are your female or child employees ever required to work extra time beyond
the time declared to be your regular running time.....
- " 33. If yes, do such employees receive extra pay for such extra time.....Or
is such pay above the regular rate.....
- " 34. Is the nature of your business such as to be deleterious to the health of your
employees.....
- " 35. Have you any adequate means for ventilation, and is such ventilation carefully
attended to.....
- " 36. Have you ample means of escape, both within and outside of your work build-
ing, in case of fire.....
- " 37. Have you ample and sufficient stairways.....
- " 38. Is your motive, wheels, shafting and belting so secured as to prevent accidents
of any kind.....
- " 39. Do your doors by which your employees must escape in case of accident, open
inward or outward.....

[CIRCULAR No. 3.]

"STATE OF NEW JERSEY,

"BUREAU OF STATISTICS OF LABOR AND INDUSTRIES,

"Trenton, May 20th, 1878.

"DEAR SIR :—The Legislature of this State, at its last session, passed an act auth-
orizing the establishment of this Bureau. The following preamble and section
clearly define its special object and duties :

"WHEREAS, as guardians of the public welfare, the State authorities are called upon
to consider and in all legitimate ways endeavor to improve the physical, mental
and moral condition of the State, especially those whose daily toil contributes so
largely to the prosperity of manufacturing and other productive industries ; there-
fore,

"2. *And be it enacted*, That the duties of such bureau shall be to collect, assort, sys-
tematize, and present in annual reports to the legislature on or before the last day of
October in each year statistical details relating to all departments of labor in the

State, especially in its relation to the commercial, industrial, social, educational and sanitary condition of the laboring classes, and in all suitable and lawful ways foster and enlarge our manufacturing and every other class of productive industry, with the view to their permanent establishment upon a prosperous basis, both to the employer and the employed.

“To carry out the purposes of this Bureau, it becomes necessary to examine into the home life, including employment, educational advantages, amusements, manner of living, and, in fact, every detail connected with the daily life of the laboring classes, for without this knowledge how can any suitable legislation to elevate their condition be obtained ?

“Many of the questions in this blank may seem to be an enquiry into your private affairs, but be assured there is no disposition to do this merely to gratify curiosity, for no name sent to this Bureau will be published without permission.

“In order to make a true report of the condition of labor in this State, it is essentially important that EVERY QUESTION which can be answered with any degree of accuracy should be replied to. You will please do this in order that the labor class may be honestly represented in our first annual report to the Legislature.

“JAMES BISHOP, *Chief.*”

“STATE OF NEW JERSEY,

“BUREAU OF STATISTICS OF LABOR AND INDUSTRIES,

“*Trenton, May 20th, 1877.*”

“BLANK No. 3 FOR EMPLOYEES.—[This blank is sent out post paid as printed matter. On its return, with written replies to the questions, it will be chargeable with letter postage. A pre-paid envelope, duly directed, is therefore sent with it, in which please enclose the blank and return by mail to this office within sixty (60) days.]

- “ 1. Name.....
- “ 2. Residence.....
- “ 3. Occupation.....
- “ 4. Nationality.....
- “ 5. By whom employed.....
- “ 6. Number of years employed.....
- “ 7. Married or single.....
- “ 8 If married, number in family.....
- “ 9. If single, price of board per week.....
- “ 10. Hours of labor per week.....
- “ 11. Whether day wages or piece work.....
- “ 12. Whether paid in cash or store orders.....
- “ 13. If in store orders what additional per cent. did you pay for articles purchased.
- “ 14. Are your wages paid weekly or monthly.....
- “ 15. Is any part withheld by employer.....
- “ 16. Actual earnings per day.....And average earnings per week.....
- “ 17. If you know your actual earnings in 1877, give them.....
- “ 18. If not, give estimated earnings in 1877.....
- “ 19. How much time have you lost during the year 1877.....
- “ 20. Cause of lost time for year.....

-
- “ 21 Give actual or estimated earnings for year 1877.....
- “ 22. Do you own the house and land you occupy.....If yes, did you pay therefor with your wages.....and how long were you in earning the purchase money.....
- “ 23. Are you owner of any real estate.....If so, what value.....
- “ 24. What proportion of your family earnings are derived from your wife and children.....
- “ 25. Do you occupy a whole house.....If so, give number of rooms.....and monthly rent.....
- “ 26. If rooms are rented give, 1st. Number of rooms you occupy.....2d. Number of rooms in the house.....3d. Number of families in the house.....4th. Rent of rooms per month.....Is there *drainage* sufficient for the waste of the house, or is it thrown upon the yard.....
- “ 27. What is the sanitary condition of house and neighborhood.....
- “ 28. What is the sanitary condition of the workshop in which you are employed..... What the size of room..... What the height of ceiling.....
- “ 29. How many stories high is the workshop.....How many persons employed therein.....Are the means of escape in case of fire ample.....
- “ 30. If there are any diseases incident to your employment, name them.....
- “ 31. Do you purchase newspapers and books.....and have you time after work to read them.....
- “ 32. Have you time before or after work for any recreative employment or amusement
- “ 33. Do your employers provide for mental culture or social recreation of any sort, such as library, reading room or music.....
- “ 34. Has new labor-saving machinery been introduced in your trade within the past five years.....
- “ 35. If yes, has it diminished the number of wage laborers employed..... Has it caused a reduction of wages.....
- “ 36. Do you belong to a Trade Union or other workingmen’s association.....
- “ 37. Have you engaged in a strike within the last five years.....If so, was the object increase of wages.....Or shorter time
- “ 38. Was the object for which you entered upon the strike accomplished.....
- “ 39. Have you ever been discharged for participation in a strike or any labor reform movement.....Have you ever known any workmen to be discharged for such causes.....
- “ 40. Has your employer ever interfered in any way to prevent you procuring employment elsewhere on account of your having been engaged in a strike or labor reform movement
- “ 41. How many boys.....girls.....between 10 and 15 years of age, and how many boys.....girls.....under 10 years of age are employed in the establishment where you work.....
- “ 42. How many hours per day.....per week.....are such children employed, and have they ever been employed in *night work*.....
- “ 43. Have the children in said factory during 1877 had public school instruction
-If yes, how many consecutive whole days.....How many consecutive half days.....

- " 44. What effect, in your opinion, has factory life upon the health of children and young women.....
- " 45. Do you know of any wage laborer who has acquired a competence from savings of their individual wage.....If yes, how many years did it require.....
- " 46. If *apprentices* are employed, upon what condition.....
- " 47. If possible, give actual (if not, give estimated) expenses for year 1877, as follows: For rent.....fuel.....clothing.....groceries.....meat and vegetables.....sundries

NOTATIONS IN RESPECT TO BLANKS.

EMPLOYMENT AND SCHOOLING OF CHILDREN.

The inadequacy of responses in regard to the employment of children deprives us of the opportunity in our notations upon the schedules, to say much more in addition to what has already been said upon that subject. We can scarcely repress the conviction that the omission to give the real facts contemplated by question No. 5 in blank No. 2, and question No. 41 in blank No. 3, involves alike employers and employees in embarrassment for ignoring a very simple statute, which says, "No minor shall be admitted as a worker under the age of ten years in any factory within the State," under a "penalty for each offence of fifty dollars."

Then in respect to the education of children thus employed, the information is no less deficient. The statute provides that children between the ages of eight and fourteen years, shall attend some public or private school at least twelve weeks in each year, six weeks at least of which attendance, shall be consecutive. The penalty for the first offence is two dollars, and for the second offence, for each and every week, the sum of three dollars.

The law of Rhode Island prohibits the employment of children in any manufacturing establishment, under the age of *twelve*; and that none between *twelve* and *fifteen* shall be employed who do not attend school at least twelve weeks in each year.

In Connecticut the law is similar to ours, but extends to *all* employments. The language is: "*No person shall employ,*" etc. The laws upon the subject of education and employment of children in Massachusetts and Connecticut are, probably, more rigorously enforced than in any of the other States, because the sentiment of the people in those States demands it.

It must be conceded that there are serious obstacles to the enforcement of similar laws to these in every community. When the times, and the cupidity of both parents and employers, conspire to evade these laws, they become well-nigh a nullity, and consequently a reproach. When fidelity to law, and a regard for the public welfare are lacking, the restraining potency of the single word "*knowingly,*" in the law relating to the ages of children employed in factories, can readily be gauged.

Universal education will ere long become imperative. The essential twin-comforts, food and clothing, are State benefactions to children, which, in our view, have a priority only to education.

In TABLE No. 2, Blank No. 2, forty-five employers report the employment of nine hundred and ninety-eight children, viz.: four hundred and eighty-five native, and five hundred and thirteen foreign, of all ages. But of that number, so far as the table acquaints us, only forty-seven attend school.

It is probable that the above embraces nearly all the children employed in the different occupations represented in Table No. 2; but what is notable and censurable in this instance, is the omission to inform us in respect to the attendance upon school of ninety-five per cent. of the children in the service of these forty-five employers. It would have been but little trouble to write yes or no in the blanks. To answer, "*I don't know*" or "*I don't care,*" as was done in some instances, evinces a very unbecoming disinterestedness in the present and future condition of the operative classes.

It will be observed in Table No. 2 that four hundred and eighty-five are unable to read and write, and we are left to infer that they are all adults, since question No. 8, in Blank No. 2, has only been answered in one or two instances. Here is brought to our view an illustration of grave and inexcusable indifference towards a much-neglected class, incapable of self-help.

We have nothing worthy of note in respect to questions Nos. 10, 11 and 12, in Blank No. 2. The omission affords us an opportunity to record some observations which strongly indicate an increased interest in other communities in the education of mill children.

In New England, evening schools and half-time schools are gaining in popularity, and seem to be well calculated to meet a pressing need. They appear to have been the outgrowth of a conviction that factory children were not receiving the educational advantages, either from State or local authorities, they are fairly entitled to. Mill owners and school committees in Massachusetts finally devised the system of half-time schools several years ago, and they have proved a success.

Study and work under this new order of things, move along harmoniously together, with accruing benefits to both educational and factory interests. Evening schools for older children and adult operatives form a part of the system. Those whose daily occupations in factories preclude their participation in the half-time schools, avail themselves of the evening classes, which, in some cases, partake of the character of industrial and manual instruction.

TABLE No. 3 relates to the highest and lowest wages for labor in 1872 and 1877. They furnish but little data for comments, carrying as they do upon their face about all that is embodied in them.

A noticeable point in respect to the wages of men, is the greater per centage of reduction in unskilled than in skilled labor. In the case of the latter, it runs from eight to an occasional thirty per cent. reduction. In the former, it ranges from twenty to fifty per cent.

In the few cases of women and children reported upon, the average of reduction is about the same as in the case of men.

There are several trades, more depressed probably than others, in which the reduction reaches forty and fifty per cent. Brick, pig iron and mining being among them.

It is proper that we should improve every opportunity as we proceed with our comments and deductions, to advance what we conceive to be the best interests of the laborer. In this spirit, we

can make one strong point revealed in the table, in favor of skilled labor. In the first place, as a matter of course, a skilled laborer always commands higher pay than a common laborer, for the obvious reason that his skill enables him to produce articles tasteful and of higher value and more ready sale. Education and manual skill enhances the value of the possessor's services in proportion to his capacity to promote his employer's interest, and this explains not only what is observable in this table in respect to the greater stability of the prices of skilled labor, but also, what is the fact well authenticated all over the country, that higher priced labor has for the most part been well employed and at well sustained prices through the season of depression. Certainly no such lack of remunerative employment has been experienced in the range of well educated and trained laborers, as in the ranks of the unskilled. Superior skill and intelligence will always advance a mechanic's social and material well-being, in proportion to his acquired capabilities to achieve success for those who furnish him with occupation. Does not this deduction justify renewed enforcement of attention to special as well as ordinary public school education ?

TABLE NO. 4.—It is much to be regretted that this important table should be so scant in the number and representative character of employees. One prominent feature consists of the predominance of the foreign element, amounting to sixty-three per cent. This discloses, with considerable emphasis, a degree of apathy on the part of the native element in respect to industrial training which, from our standpoint, is not agreeable to contemplate, but is susceptible of a variety of interpretations.

We are well aware that our necessities in respect to the higher industrial pursuits, which we are glad to see are being extended in our own State and throughout the country, forced upon our manufacturers a resort to the superior manual and artistic skill of Europe, in order to render successful our purpose to prolong the industrial conflict with the more advanced trans-Atlantic competitors.

It cannot be disguised that we are very largely indebted to the importation of skilled labor for our recent achievements in the manipulation of raw materials, and so long as this foreign

element manifests a disposition to coalesce with our American systems and institutions, it will be joyfully welcomed to share with us the sure prosperity that awaits us in the near future. We concede their acquired superiority in all the departments of industry involving skill and taste, and regard their presence here as hopeful of the best results upon our own people, whose uppermost convictions are beginning to enforce attention to foreign systems of special education, as worthy of speedy adoption in American communities.

But we must express deep regret that our native employees have seemingly by design, refrained to such an extent from practical acquiescence in the beneficent purpose of this department, and shall depend upon reflection and observation for better results in the future.

The contents of this table are wholly derived from Employees Blank No. 3. It will be observed that where there is more than one representative of an occupation, the average of wages is obtained by the division of the aggregate by the number of laborers enumerated in that occupation.

We have no reason to think that there are any salary receivers represented in this table, as responses regarding salaries have been too infrequent to be worthy of note, so we assume that only wages are in this calculation.

The average daily wages of one hundred and ninety-four males engaged in fifty occupations here represented is \$1.78. This is, to be sure, a small number of persons upon which to base an average, but its significance is not to be ignored. Other attempts to obtain the same result have been scarcely less satisfactory, but have been regarded as valuable. The average is certainly not greatly at variance with results upon a much larger scale in other States, as for instance in Massachusetts in 1876, where forty-eight thousand seven hundred and ninety-seven males showed an average of \$2.01. The United States government is much in the habit of using small numbers for averages, and in Europe averages are seldom based upon large numbers. But, nevertheless, our choice would be to have a much broader basis, and we will aim to make it so in future operations.

The average highest yearly earnings of forty-eight males is

\$627.42, and the average lowest of twenty-seven females is \$338.50. The very large percentage of lost time, averaging forty nine and one-quarter days to each man, or one-sixth, will in some measure account for the large number of low earnings.

There seems to be but three cases in this exhibit of excess over sixty hours of work per week, and one of the number is certainly worthy of special mention, that of a car driver, who informs us that he works ninety hours a week, for \$11.20, or \$1.60 a day.

REMARKS ACCOMPANYING EMPLOYERS' BLANK NO. 3.

OFFICE No. 26. "Note explaining answer to question 20 in blank. Cause of lost time. Silk weavers work by the piece. A warp of fifty to one hundred yards (according to the size of the loom) is given them to 'weave down,' and they are paid so much per yard. When the warp is 'woven down' (*i. e.* finished) it is 'cut off' of the loom. Then a new warp is 'twisted in.' That is, each thread of the new warp is tied or twisted to the ends of the thread still attached to the roller of the loom. This work is generally done by the weaver himself, and takes him two or three days to a week, according to the nature of the piece. During this time he receives no pay and so counts it as 'lost time.' Actually, however, the time they 'lost' is taken into account in making up the price to be paid him in weaving the silk fabric. Sometimes the mill owner puts another man to 'twist in' the warp, and then the weaver is paid less for weaving. Thus it happens that the most industrious weaver, though actually working every day in the year at the nominal wages of \$15 to \$20 per week, receives wages at those rates only for the time he is actually weaving or for eight to eleven months in the year. Hence, his actual wages, taking the year through, are from eight to thirty per cent. less than his nominal wages."

OFFICE No. 64. "This blank will give about the condition of this class. There are three gangs whose wages run from \$1.75 per day to \$2.05. Many of the men own little houses, some of which are clear of incumbrance; others partially incumbered,

most of the purchase money being earned by day wages, while a number pay rent."

OFFICE No. 113. "It is often very difficult to tell just how the family live, and although they have not actually been driven to want, they are often reduced to short allowance."

OFFICE No. 250. "I am what may be called a first class shoemaker. I get \$2, \$2.50 and \$3 a pair for shoes, and can make a pair in twelve hours, or a pair per day, if I could get them, but things have got so bad that I cannot average more than three pairs a week at an average rate of \$2.50 per pair. I reckon about one dollar a week for clothing, the rest, by careful management, keeps the family alive, which consists of seven persons. I never take intoxicating drinks."

OFFICE No. 165. "This is a fair statement of one out of thirty workmen, but is not reliable as to other shops in this city. We have had steady work while nearly all other shops have had not more than half time. If you should take the wages earned by all the cabinet makers in Newark, it would not exceed \$7.50 per week."

OFFICE No. 266. "It takes more than I can earn to keep my family. I am now idle; no work. I have two sons also idle. Our condition has been bad since 1873."

OFFICE No. 96. "What is your idea about the eight hour system? I think it should be strictly enforced. What do you think about compulsory education? The law should be carried out to the letter. It would take a great many children out of our factories and make room for adults who are now compelled to be idle."

TABLE No. 5. This table displays the yearly earnings and expenses of one hundred and fourteen families, and shows also both the excess and deficits of expenses in detail, with the number in each family.

The total earnings of the heads of these families (assisted by so

few other members of the families, thirteen, the total earnings of which is \$1,317, and so small that we will take no other note of it than this) is \$58,552.96, or an average of \$513.64. Their total expenses amount to \$59,437.99, or an average of \$521.38. The excess of total expenses over total earnings, averages one and one-half per cent.

The table also informs us that there are forty, or thirty per cent., whose earnings exceed expenses from \$10, the lowest, to \$278, the highest; and fifty-five, or forty-nine per cent., whose expenses exceed earnings, from \$4, the lowest, to \$472, the highest.

The average number in each family here represented is four and seventy-one hundredths.

The coincidence in some of our results with the remarkable tabulations of the Massachusetts Bureau in 1876 appear again, and will perhaps tend to strengthen confidence in our less expanded work. In this hope we deem it proper to institute further comparisons. It is important to note that the Massachusetts deductions are based upon one thousand and ninety-six families, and ours upon one hundred and fourteen, or thereabouts.

In respect to the total earnings of the heads of families, in Massachusetts, it is \$510.34; in New Jersey, \$513.04.

The cost of living in Massachusetts is \$550.20; in New Jersey, \$521.38.

The average number in each family represented in Massachusetts is 4 42-100; in New Jersey, 4 71-100. These figures are designed to represent in both cases the number of persons dependent upon the male head of the family, consequently the male head is not included in these averages.

We have averaged the detailed expenditures of the families, which will be of service chiefly to those who have the curiosity to apply tests from personal experience and observation:

Rent.....	\$94 92	Fuel.....	\$26 61
Clothing... ..	71 17	Groceries.....	190 27
Meat and Vegetables,	111 30	Sundries.....	63 26

It is hardly necessary to revert to what will be seized upon at a glance by every thoughtful individual who scrutinizes our tabulations at all, as the most unwelcome truth they reveal, viz.: that the average cost to maintain 114 families, consisting of a

small fraction less than six persons, including both heads, exceeds the earnings of the male head of each. Whatever cause or causes occasions this result, it must be contemplated with unfeigned sorrow.

It is unquestionably the duty of every male head of a family to use his best powers and adapt his habits and mode of life to the primary necessity of supplying all the reasonable wants of those who are dependent upon him. This should be accomplished, if it is possible, wholly without wage-labor assistance either from wife or children. The wife has appropriate and necessary duties to discharge which are in a large degree helpful in the maintenance of the family, and inseparable from what should be regarded as promotive of the best social and material interests of all, but especially of the children. No husband can be exculpated for exacting, or even permitting his wife voluntarily, to contribute to the support of himself and his children by systematic wage-labor, until he has exhausted his own physical and economic capabilities for such a requirement.

These few observations are suggested, of course, by the adverse aspect of this table, which, as we have shown, has its counterpart in other communities two years antecedent to this date. Having no data upon which to ascertain any averages prior to this date compassing earnings and cost of living, we are not authorized to extend our deductions backwards only by inference, and this would not be admissible.

We would not be unmindful of the extent and duration of the industrial and commercial pressure, now believed to be in its relaxing state, as in some degree tending to palliate what would otherwise be inexcusable, probably, in a large majority of the cases under review. We should undoubtedly do injustice to many of the male heads of these families if we were to hold them strictly accountable for their household deficits. They do not always arise from inadequate earnings, but from causes traceable to injudicious and unfrugal feminine headship.

It is not unlikely that this preponderance of family expenses over earnings may be explained in part by the long prevailing extravagance which has penetrated all classes and communities, and has no doubt very materially contributed to these unseemly inequalities. Since but few can claim exemption from what has

thus been productive of incalculable evil, this reference to it will not be regarded as offensive.

The literal meaning of extravagance is "wandering beyond a limit." In its application to family expenses, our country can more forcibly exemplify this interpretation than any other. It furnishes a text for extended criticism, but we have not sufficient data at present to improve the opportunity.

Our table of family expenses does not admit of much subdivision for detailed analysis. The column for "sundries" shows a percentage of nine and one-half, which is perhaps not open to special criticism, since the average of earnings of \$513.64, will justify it. As the average of earnings rises, the "sundries" do not usually accompany it in an approximate ratio. A table of this sort would be incomplete without a column in which to obscure many miscellaneous items of family disbursements which do not properly belong to those, in common parlance, denominated "necessities." It is a convenient and temporary receptacle for outlays other than those for which it was designed.

We take the liberty of suggesting for consideration, whether it would not be serviceable in some regards for all classes, but especially for those whose incomes are derived from salaries and wage labor, to pay more attention to tabulated accounts of both personal and family expenses. We feel well assured that if every laboring man would keep, however rudely, an itemized account of all his expenses, it would almost unconsciously and oftener than he would imagine, have the effect to diminish his yearly outlay, certainly in some of the questionable sources of absorption of earnings.

Many a young man swayed by temptation, spends his daily earnings with unconscious liberality and for improper purposes, until it becomes a fixed habit not easily subdued. Whereas, if his instincts and tendencies were calculated to lead him in the opposite direction—to husband his small earnings—the restraining influences of a daily record of his early monetary transactions, could not fail in many cases to produce good results in after life.

Our convictions and inferences upon this subject of economy and the misuse of earnings, are so much the result of observation, and their bearings are so manifestly identified with all the

material and social interests of those whose incomes are limited and fluctuating, that we feel impelled to discourse upon them without stint.

There are vast amounts of money spent in all communities and by all classes for purposes connected with purely personal gratification, which are viewed with degrees of approbation and disapprobation, in respect to their social and moral influences. Then again, there is probably an equal amount expended for more questionable purposes, which need not be enumerated because of their ready recognition, but which are more demoralizing in their influences. The salary and wage labor classes have shared with others to the extent of their means in irrational and improvident uses of money, and the special point we wish to enforce upon them in this connection is, if their circumstances would admit of the appropriation of such an amount of surplus earnings to such indiscreet uses, how much wiser it would have been to devote the same amount to objects which would contribute to the education and social elevation of themselves and their families, or to have set it aside to form a nucleus for a competency.

As there are many assuring indications that prosperity is near at hand, we think its dawn may be accelerated, and its permanency rendered more secure, by restored habits of economy. If our State and nation are to enter upon a new and prosperous era, the opportunity is propitious for every individual, if he has any bad habits to abandon them; abrogate his extravagant propensities; determine to achieve success in his vocation; advance in the scale of manliness and independence, and aim at acquiring a competence. Only apprehension and discontent can flow from the habit of allowing annual expenses to transcend annual earnings.

TABLE No. 6 was prepared chiefly to indicate how little we have learned about the employment of children. We are informed that one hundred and three under ten years of age, and one thousand and thirty-eight between the ages of ten and fifteen were employed in various manufacturing establishments. We can express unfeigned gratification that the number of the former is no larger. What relates to the compensation

demands no other notice than to say that it seems to be upon a liberal scale.

The subject of the employment of young children at daily wage-labor in factories would not, as a matter of course, have engaged public attention to such an extent in the last half century, had it not been esteemed of the highest importance in its relations and bearing upon the healthful development and prosperity of the great operative classes in both hemispheres. We cannot embrace the present occasion for extended strictures upon this topic, but shall hope to have an opportunity to refer to it at some future time. It is with great satisfaction that we can observe vast changes in public sentiment in whatever relates to the alleviation and elevation of the toiling masses.

The English apprentice system may be referred to by the descendants of at least three generations of factory children in England to illustrate insatiable avarice of unmatched enormity. The wickedness of the system was only partially enacted in the mills. The primary sin consisted in gathering alms-house children by the thousand from populous cities, and under bonds of indenture, transporting thence to the manufacturing districts to serve out a twenty-one years' servitude, more revolting than we can recall in the remotest period of our own history. It will scarcely be received as authentic history, when we state that Parliamentary records show that numberless *four* year old children were indentured under this cruel system. This has all been changed now in England, but there remains much still to be accomplished there as here, before full justice is attained in respect to young children destined to a life of toil.

TABLE No. I.—EMPLOYEES BLANK No. 2.

Classification of Industries Represented by Blank No. 2.

	Number of Blanks Returned.		Number of Blanks Returned.
Agricultural implements.....	1	Patent leather.....	1
Builders.....	1	Paper hangings.....	4
Brass Castings.....	1	Pig iron.....	1
Brickmakers.....	2	Planing mill.....	1
Bakeries.....	3	Paper.....	1
Binders boards.....	1	Quarrying.....	1
Crucibles of steel.....	1	Rubber hose and belting.....	2
Castor oil.....	1	Refined sugar.....	1
Carriage wheels.....	2	Reed organs.....	1
Clothing.....	1	Rubber boots and shoes.....	1
Cabinet furniture.....	3	Steam radiator.....	1
Candles and soap.....	1	Steel and steel goods.....	1
Carriages.....	4	Sawing.....	1
Cooperage.....	1	Spelter.....	1
Cream Tartar.....	1	Sash, blinds and doors.....	5
Distilling.....	1	Shoes and boots.....	5
Foundries.....	5	Sugar and syrup.....	1
Glass bottles.....	2	Stone cutting.....	1
Grinding flint and spar.....	1	Soap.....	1
Grape and fruit wine.....	1	Seeds and plants.....	1
Grinding flour and feed.....	4	Silks.....	1
Horn jewelry.....	1	Sewing machines.....	1
Harness and saddles.....	2	Storage Co.....	1
Iron castings.....	5	Tobacco manufacture.....	1
Illuminating gas.....	3	Tin and sheet iron ware.....	1
Iron and iron and steel wire.....	1	Trunks and bags.....	1
Iron rails, beams, &c.....	2	Woolen undergarments.....	1
Knitted goods.....	1	White earthenware.....	1
Lime and bone dust.....	1	Woolen and merino yarns.....	1
Oakum.....	2	Wood moulding.....	1
Printing books and blanks.....	1	White lead and paint.....	1
Painting.....	1	Woolen and wool and cotton goods.....	1

TABLE No. II.—BLANK No. 2.

Nationalities, Wages, Hours of Labor, Education.

Office Number.	TRADE.	NUMBER OF PERSONS						Total.	Number that cannot read or write.	Children that attend school.	HOURS OF LABOR PER WEEK.	
		EMPLOYED.									Adults.	Children.
		Native.			Foreign.							
		Men.	Women.	Children.	Men.	Women.	Children.					
58	Bakery	14		26			40		22	60	60	
14	Spelter	55			172		230	120		60	60	
16	Sugar and syrup				33		35			60	60	
37	Stone cutting	5			6		13	1		60	60	
1	Builder	10					10			60	60	
9	Tobacco manufacture	580	1570				2150			60	60	
31	Grinding spar	10			14	1	25			60	60	
3	Brass foundry	7		1			8			60	60	
59	Carriages	10			3		14			60	60	
15	Machinery	10			15		25			60	60	
102	Wall paper	30		6	37	2	79	7	10	60	60	
84	Planing mill	4		2	43		56	3		60	60	
19	Clothing	9	12		8	13	42	2		60	60	
52	Carriage spokes	8			12		20			60	60	
23	Sugar refining	50			84		138			60	60	
81	Cooperage	6		2	24		35			60	60	
17	Underwear and hosiery	28	88	127	36	106	196	85		60	60	
77	Pig iron	50			100		150	75		60	60	
18	Brick	9		4	11		29	1		60	60	
99	Shoes	8	6		1		15			60	60	
80	Oakum	15		5	8		33			60	60	
20	Iron rails and beams	40		10	460		525			60	60	
13	Lumber	3		2	17		25	8		60	60	
71	Furniture	2			3		7			60	60	
98	Grinding spar and clay	10			15	1	26			60	60	
83	Distilleries	6		1	19		27			60	60	
10	Carriage wheels	24		1			25	2		60	60	
101	Hollow glassware	175		45	125		400	25	15	48	48	
4	Agricultural implements	92		14	83		11	200	3	60	60	
69	Silks	20	3	2	40	20	15	100		60	60	
51	Knitted goods	2	50		2	50	104			60	60	
44	White earthenware	25		18	15		10	68		60	60	
32	Shoes	5	2		4	4	15			60	60	
97	Brick	25			200	10	250			60	60	
25	Horn jewelry	4		7	5		10	26		60	60	
47	Soap	2		1	3		6	1		60	60	
53	Iron and iron and steel wire	110		30	220		40			60	60	
98	Reed organs				67		165			60	60	
21	Printing	19		6	2		27			60	60	
82	Wood moulding	6		3	7		4	20	6	60	60	
27	Oakum	2			13		15	30	10	60	60	
70	Rubber goods	15			25		40			60	60	
46	Boots and shoes	80	30	17			127			60	60	
11	Steel goods	75		8	115		7	205	52	60	60	
74	Patent leather	6			24		30	6		60	60	
89	Flour and feed	5	5		2		4	1		60	60	
5	Steam radiators	7			28		35			60	60	
38	Bakery	7			18		25			60	60	
40	Paper hangings	25			38		63			60	60	
60	Carriages	10					10			60	60	
2	Rubber goods	35			5		40	2		60	60	
64	Machinery	49			51		100	2		60	60	
33	Shoes	4					6			60	60	
72	Furniture	5			5		10			60	60	
50	Bar iron and spikes	30		3	18		2	53		60	60	
35	Wool and cotton goods	7	16	8	1	6	3	41		60	60	
68	Storage						71	11		60	60	
41	Carriages	23			7		30			60	60	
39	Cabinet furniture	10			20		30			60	60	
65	Car wheels	3			17		20	2		60	60	
73	Sash and blinds	150		6	100		4	260		60	60	
30	Ladies shoes	8	4	4			16	4		60	60	
49	Candles and soap	20	5	2	15	19	5	66		60	60	
63	Rubber shoes	95	44		49	87	275	14		60	60	
29	Woolen yarns	2		1	2	2	9	3		60	60	
75	Trunks and bags	80	2	35	70	3	15	205	30	60	60	
26	Mixed paints	3					3			60	60	
12	Iron castings				28		23			60	60	
76	Foundry and machinery	100		20	175		30	325		60	60	
67	Seeds and plants	10		5	20		15	50		60	60	
79	Stone cutting	10			30		40	10		60	60	
55	Sash and blinds	6		4			1	11		60	60	
103	Sheet metal goods	75		30	75	5	35	220		60	60	

TABLE No. III.—BLANK No. 2.

Showing the highest and lowest day wages for Labor in 1877 and 1872.

Office Number.	TRADE.	WAGES PER DAY IN 1877.			WAGES PER DAY IN 1872.		
		Men.	Women.	Children.	Men.	Women.	Children.
94	Sash and blinds.....	\$2 50		65	\$3 75		\$1 00
		1 10		42	1 75		75
82	Wood mouldings.....	3 33½		50			
50	Bar iron.....	1 35			1 75		
91	Harness and saddlery.....	5 00			6 00		
		1 00			1 25		
81	Cooperage.....	2 00					
		86					
49	Candles.....	3 00	\$1 25		3 75		
		1 50	1 00		1 87		
53	Iron.....	3 00		90	3 88		1 10
		90		40	1 30		65
70	Rubber goods.....	3 25			3 75		
		1 60			1 90		
69	Silks.....	2 25	1 50	\$1 00			
		2 00	75	50			
79	Stone cutting.....	2 00					
		1 00					
25	Horn jewelry.....	2 00			3 00		
		1 00			1 50		
76	Foundry.....	2 00			2 50		
		1 00			1 40		
78	Foundry.....	2 00			2 55		
		50			65		
41	Carriages.....	3 00			3 50		
		1 50			2 00		
24	Machinery.....	4 00			4 50		
		1 00			1 25		
29	Woolen yarn.....	2 00	75	33½	2 25	85	37½
45	Castings.....	2 00					
		1 50					
74	Enameled leather.....	3 33			3 70		
		1 35			1 45		
89	Flour and feed.....	2 50					
		1 00					
44	Earthenware.....	3 00	60		3 25		
		1 25			1 37		
39	Furniture and bedding.....	3 00			4 25		
		1 25			1 75		
18	Brick.....	2 25		80	2 87		1 05
		1 00		40	1 30		52
13	Lumber.....	3 00		75	3 75		90
		1 00		25	1 20		30
5	Steam radiator.....	3 50					
		1 50					
88	Iron work.....	3 00			4 20		
		1 00			1 25		
4	Agricultural implements.....	3 00		1 00	3 75		1 25
		1 50		50	1 87		62
75	Trunks and bags.....	2 25			2 81		
		1 25			1 50		
87	Paper maker.....	2 00	75				
32	Sash and blinds.....	2 50					
		1 50					
48	Illuminating gas.....	3 00			3 50		
		1 50			2 00		
35	Woolen and cotton goods.....	3 33	1 50				
		1 50	75				
27	Oakum.....	1 75	75		2 15		1 00
		1 00	25		1 25		31
33	Machinery.....	2 75			3 00		
		1 50			1 75		
31	Cream tartar.....	2 00			2 25		
		1 75			2 00		
9	Tobacco manufacture.....	3 50	1 75				
		75	60				
85	Binders' boards.....	2 50	80		3 00	\$1 00	
		90			1 75		

TABLE No. III.—BLANK No. 2—(Continued.)

Office Number.	TRADE.	WAGES PER DAY IN 1877.			WAGES PER DAY IN 1872.		
		Men.	Women.	Children.	Men.	Women.	Children.
59	Carriages	\$2 25			\$3 25		
		1 50			1 87		
83	Distilleries	2 75			3 25		
		1 50			1 80		
58	Bakery.....	3 00					
		1 50					
61	Sash and blinds.....	2 75			3 50		
		1 75			2 25		
3	Brass castings.....	2 75			3 25		
		1 25			1 50		
65	Car wheels.....	2 75			3 00		
		1 35			1 50		
1	Builder.....	2 50			3 25		
		1 50			2 00		
102	Wall paper.....	5 00	\$1 00	42	6 00	\$1 25	50
		1 00		25	1 25		30
26	Paint.....	1 67			1 87		
67	Florist.....	3 75			4 25		
		1 00			1 30		
56	Tin and sheet iron ware.....	2 75					
		1 50					
15	General machinery.....	3 00			3 50		
		2 00			2 25		
8	Grinding flour, &c.....	1 75			2 25		
		1 00			1 25		
28	Lime and bone dust.....	1 50					
90	Grape and fruit wines.....	3 00	1 50	25	5 00	2 75	50
		75			1 50		
73	Sash and blinds.....	2 00			2 50		
		1 25			1 60		
62	Gas.....	2 25					
		1 50					
16	Sugar and syrup.....	6 00					
		1 00					
10	Carriage wheels.....	2 50			5 00		
		1 00			2 00		
5	Steam radiator.....	3 50			4 50		
		1 50			2 00		
84	Planing mill.....	4 00		50	5 50		75
		1 25			1 75		
30	Shoes.....	3 00					
		1 00					
23	Sugar refining.....	3 00		60			
		1 75					
52	Spokes and carriage springs.....	3 00			3 50		
		1 25			1 75		
47	Soap.....	2 00		66 ² / ₃	2 20		
		1 60			1 80		
101	Hollow glassware.....	6 00		70	6 70		77
		1 00		40	1 10		45
11	Steel goods.....	6 00		\$1 00	7 00		\$1 35
		1 00		50	1 40		67 ¹ / ₂
72	Furniture.....	3 00			3 00		
		1 00			1 50		
21	Printing.....	3 00	1 16	58	3 50	1 33	65
		2 12	1 06	20	2 62	1 15	25
19	Clothing.....	3 00	1 25		3 30	1 38	
64	General machinery.....	3 50			4 25		
		1 40			1 70		
20	Iron rails and beams.....	3 20			4 00		
		1 00			1 30		
63	Rubber boots and shoes.....	2 50	1 15		3 12 ¹ / ₂	1 37 ¹ / ₂	
		50	50		62 ¹ / ₂	62 ¹ / ₂	
17	Hosiery and underwear.....	4 25	1 62	1 25			
		1 25	70	35			
34	Flouring mill.....	2 00					
		1 25					
12	Iron castings.....	2 51		83	3 00		1 00
		50		66	1 75		75
100	Shoes.....	2 50			3 00		
		1 00	83 ¹ / ₃		1 18	1 10	

TABLE No. III.—BLANK No. 2—(Concluded.)

Office Number.	TRADE.	WAGES PER DAY IN 1877.			WAGES PER DAY IN 1872.		
		Men.	Women.	Children.	Men.	Women.	Children.
98	Grinding flint and spar.....	\$2 00	\$1 00				
		1 33					
97	Brick.....	4 00	1 25		\$7 75		
		90	75		1 90		
71	Furniture.....	1 66					
		1 50					
2	Rubber goods.....	3 33 $\frac{1}{3}$			4 00		
		1 00			1 25		
96	Organs.....	3 00			3 75		
		1 00			1 25		
68	Storage Co.....	5 00		90	6 75		
		1 25			1 20		
54	Wall paper hanging.....	2 50	58 $\frac{1}{3}$	42 $\frac{1}{2}$			
43	Painter.....	2 00			2 50		
		2 00			3 75		
77	Pig iron.....	50			1 00		
		3 00			4 00		
14	Spelter.....	95			1 25		
		4 00		80			
22	Glass bottles.....	1 00		38			
80	Oakum.....	2 50		75	3 00		90
99	Shoes.....	2 00	66		2 50	88	
		1 25			1 50		
51	Knitted goods.....	3 33	1 33		4 00		
		1 33	50		1 75		
12	Iron castings.....	2 50		83			
		1 50		66			
40	Paper hangings.....	4 80		91 $\frac{1}{3}$	5 25		
		1 00		37 $\frac{1}{2}$	1 10		
55	Sash and blinds.....	2 50		75			
103	Sheet metal goods.....	3 16	1 33				
		83	75				

TABLE No. IV.—BLANK No. 3.

Occupation or Trade of Persons from Blanks returned. Nationality, Wages and Hours of Labor.

TRADE.	No. of Blanks re- turned.	NATIONALITY.					WAGES.			EARNINGS, 1877.		Hours of Labor.	Days Lost.
		American.	English.	German.	Irish.	British Provinces and others.	Highest.	Lowest.	Average.	Highest.	Lowest.		
Architect.....	1	1					\$3 00		\$3 00	\$1050 00		59	
Brass workers.....	2	1		1			1 16	\$1 10	1 13	300 00	\$281 00	60	90
Bleachers.....	3		1			2	3 00	2 16	2 44½	800 00	724 00	59	
Bookkeepers.....	3	2					3 20	3 00	3 10	1000 00	936 00	60	
Box maker.....	1			1			1 50			350 00		60	60
Blacksmiths.....	7	5			2		3 00	1 00	1 91¼	850 00	260 00	57	194
Chair maker.....	1	1					75			234 00		60	160
Compositors.....	2	1		1			1 00			275 00	100 00	60	198
Carriage makers.....	2	2					2 00			550 00		60	20
Carpenters.....	6	4		2			2 00	1 00	1 60	850 00	275 00	53	316
Calico finisher.....	1		1				1 50					60	110
Cabinet makers.....	3			3			2 27	1 75	1 94	637 00	450 00	59	66
Dyers.....	2			1		1	5 00	2 25	3 62½	1200 00	650 00	59	
Engineers.....	2	2					2 70	2 25	2 47½	850 00		60	
Engraver.....	1			1			50			460 00		60	140
Foreman.....	10	7		2	1		4 00	1 50	2 66½	1200 00	468 00	63	36
Glass blowers.....	2	2					2 92	2 50	2 71	876 19	480 00	48	130
Gold chain maker.....	1			1			2 00			334 00		59	180
Grinding and polishing.....	2			2			2 00			439 00		59	300
Horse car conductor.....	1	1					1 60			500 00		90	30
Harness makers.....	6	3		1	1	1	2 50	95	1 58	400 00	270 00	56	612
House painters.....	2		1	1			2 00			500 00	144 00	60	302
Iron moulders.....	5				3	2	2 75	1 30	1 58	700 00	400 00	55	73
Jewelers.....	7	1		5		1	2 16	1 16	1 80	494 50	300 00	58	676
Kilnman.....	1	1					1 33½			354 00		54	
Laborers.....	19	5	2		12		2 00	1 12	1 40	700 00	100 00	67	875
Metal spinner.....	1				1		2 25			562 00		59½	34
Machinists.....	10	6	1	2		1	2 75	1 50	2 15	852 00	437 00	57	293
Organ tuner.....	1	1					3 00			1000 00		59	24
Potter.....	1		1				2 25			420 00		64	140
Polishing.....	1	1					1 50			396 00		60	18
Printers.....	2	2					2 17	1 50	1 83½			59	
Shoemakers.....	15	4	3	4	3	1	2 50	1 16	1 51	720 00	363 00	60	736
Ship carpenter.....	1	1					2 50			725 00		60	30
Silver plater.....	1			1			2 67			700 00		59	30
Sew. machine operators.....	3	2		1			2 33	1 07	2 05	600 00	288 00	59	190
Scroll Sawing.....	2	1		1			1 75	1 67	1 71	566 65	432 00	59	167
Silk designer.....	1		1				5 00			1500 00		60	16
Snuff packers.....	4	3			1		2 50	1 00	1 62	770 00	312 00	56	40
Silk spinners.....	2	1		1			75	60	67½	200 00	160 00	60	24
Skate makers.....	2	1		1			1 50			324 00		59	280
Segar makers.....	1			1			1 25			340 00		60	
Stone cutter.....	1		1				2 00			260 00		60	150
Silk weavers.....	9		4	3		2	2 50	83	1 58	600 00	196 14	62	806
Travelling bags.....	22	3	2	14		3	2 50	1 00	1 51	650 00	230 40	59	1062
Tinsmith.....	1				1		2 25			675 00		60	10
Tobacco manufacturers.....	7	4		1	2		3 00	67	1 34½	936 00	208 00	57	194
Trunk makers.....	9	2	1	6			2 00	1 00	1 37	700 00	325 00	54	280
Wood turners.....	2	2					2 00	1 00		415 00	100 00	60	300
Wool weavers.....	3			3			2 50	1 33	2 11	300 00	250 00	60	180

TABLE No. V.—EARNINGS AND EXPENSES.

Selected Returns giving Total Earnings of Family, Expenses, and Excess of Earnings over Expenses.

Office No.	OCCUPATION.	YEARLY EARNINGS.			EXPENSES PER YEAR.						EXCESS OF		Number in Family.	
		Head of Fam-ily.	Others in Family.	Total.	Rent.	Fuel.	Clothing.	Groceries.	Meat and Vegetables.	Sundries.	Total.	Earnings over Expenses.		Expenses over Earnings.
40	Silk designer.....	\$1,500 00	.....	\$1,500 00	\$240 00	\$40 00	\$150 00	\$300 00	\$200 00	\$500 00	\$1,430 00	\$70 00	.....	3
13	Blacksmith.....	702 00	.....	702 00	72 00	35 00	115 00	200 00	150 00	100 00	672 00	30 00	.....	4
6	Iron moulder.....	415 00	.....	415 00	.....	25 00	100 00	225 00	150 00	50 00	550 00	.....	\$35 00	3
24	Brass filing.....	300 00	\$30 00	330 00	48 00	11 00	20 00	.....	.....	.....	.....	.....	.....	3
45	Laborer.....	260 00	100 00	360 00	60 00	30 00	100 00	156 00	104 00	30 00	480 00	.....	120 00	4
238	Jeweler.....	300 00	.....	300 00	72 00	.....	.....	156 00	150 00	.....	378 00	.....	78 00	4
193	Cabinet maker.....	637 00	.....	637 00	.....	20 00	50 00	275 00	200 00	100 00	645 00	.....	8 00	5
202	Bleacher.....	724 00	.....	724 00	120 00	30 00	50 00	300 00	104 00	120 00	724 00	.....	.....	5
43	Cedar cooper.....	1,000 00	.....	1,000 00	.....	50 00	200 00	300 00	150 00	300 00	1,000 00	.....	.....	5
17	Shoemaker.....	240 00	.....	240 00	100 00	20 00	25 00	75 00	25 00	10 00	255 00	.....	15 00	3
273	Jeweler.....	468 00	.....	468 00	.....	45 00	90 00	156 20	156 20	30 00	477 40	.....	76 72	2
188	Brass finisher.....	440 00	.....	440 00	72 00	30 00	100 00	150 00	200 00	80 00	632 00	.....	192 00	4
235	Grinding and polishing.....	281 00	.....	281 00	84 00	32 00	15 00	90 00	102 00	.....	323 00	.....	42 00	4
192	Cabinet maker.....	439 39	.....	439 39	72 00	30 00	75 00	200 00	104 00	50 00	531 00	.....	92 61	6
162	Stoker.....	479 25	.....	479 25	70 00	30 00	50 00	160 00	130 00	25 00	465 00	14 25	.....	6
170	Rubber goods.....	660 00	.....	660 00	.....	.....	.....	.....	.....	.....	500 00	160 00	.....	4
180	Bag maker.....	672 31	.....	672 31	.....	.....	.....	.....	.....	.....	672 31	.....	.....	2
4	Machinist.....	570 00	.....	570 00	.....	27 00	75 00	205 00	160 00	129 70	596 70	.....	26 70	4
41	Silk hatter.....	496 00	.....	496 00	120 00	45 00	30 00	140 00	175 00	10 00	520 00	.....	24 00	4
39	Blacksmith.....	350 00	50 00	400 00	120 00	20 00	20 00	150 00	90 00	.....	400 00	.....	.....	3
270	Jeweler.....	600 00	.....	600 00	150 00	30 00	50 00	200 00	100 00	50 00	588 00	20 00	.....	4
196	School teacher.....	470 00	.....	470 00	108 00	30 00	100 00	200 00	150 00	50 00	638 00	.....	160 00	5
212	Gold chain maker.....	769 62	.....	769 62	212 70	21 25	102 23	200 00	136 37	97 07	769 62	.....	.....	4
271	Tailor.....	300 00	.....	300 00	54 00	40 00	25 00	100 00	80 00	1 00	300 00	.....	.....	5
179	Laborer.....	310 00	.....	310 00	54 00	10 00	50 00	150 00	80 00	20 00	364 00	.....	54 00	4
182	Cast Iron pipe chipper.....	480 00	.....	480 00	84 00	15 00	35 00	200 00	146 00	.....	480 00	.....	.....	4
46	Stonecutter.....	200 00	.....	200 00	100 00	15 00	20 00	150 00	20 00	50 00	355 00	.....	155 00	4
23	Silk weaver.....	260 00	100 00	360 00	108 00	20 00	50 00	100 00	50 00	.....	328 00	32 00	.....	12
253	Traveling bags.....	475 00	.....	475 00	96 00	30 00	60 00	200 00	100 00	50 00	536 00	.....	61 00	3
25	Machinist.....	450 00	.....	450 00	80 00	20 00	75 00	100 00	80 00	100 00	455 00	.....	5 00	4
37	File cutter.....	852 00	.....	852 00	192 00	13 50	100 00	180 00	120 00	50 00	655 50	96 50	.....	4
42	Bookkeeper.....	400 00	.....	400 00	48 00	30 00	50 00	200 00	50 00	20 00	350 00	50 00	.....	5
272	Jeweler.....	638 00	.....	638 00	240 00	50 00	250 00	364 00	110 00	26 00	1,040 00	.....	402 00	9
176	Silver plater.....	700 00	.....	700 00	70 00	36 00	100 00	250 00	200 00	50 00	706 00	.....	306 00	8
136	Shoemaker.....	832 75	.....	832 75	72 00	20 00	50 00	150 00	75 00	25 00	392 00	.....	59 25	5

191	Watchman.....	395 00	350 00	40 00	24 00	35 00	150 00	110 00	8 00	355 00	.....	6
230	Coach smith.....	590 00	260 00	850 00	216 00	40 00	120 00	416 00	156 00	948 00	.....	6
133	Glass bottle blower.....	320 00	160 00	480 00	120 00	25 00	77 00	220 73	67 00	532 91	.....	5
109	Skate maker.....	150 00	50 00	200 00	60 00	20 00	40 00	150 00	100 00	380 00	.....	8
161	Shoemaker.....	488 00	.....	488 00	84 00	32 00	50 00	150 00	200 00	516 00	.....	6
259	Wool weaver.....	250 00	.....	250 00	42 00	12 00	60 00	60 00	20 00	254 00	.....	4
60	Chair maker.....	334 00	.....	334 00	66 00	20 00	40 00	75 00	35 00	236 00	98 00	3
94	Jeweler.....	494 00	.....	494 00	96 00	25 00	70 00	120 00	185 00	596 00	.....	2
146	Operator on thread machine.....	600 00	.....	600 00	60 00	50 00	100 00	250 00	75 00	585 00	15 00	3
130	Planer.....	250 00	.....	250 00	72 00	50 00	150 00	300 00	150 00	722 00	.....	10
89	Bag maker.....	600 00	.....	600 00	78 00	20 00	40 00	200 00	100 00	578 00	22 00	3
5	Laborer.....	225 00	.....	225 00	7 00	25 00	30 00	100 00	25 00	225 00	13 00	6
58	Shoemaker.....	350 00	.....	350 00	150 00	17 00	25 00	125 00	50 00	367 00	.....	3
120	Harness maker.....	204 00	26 00	322 00	48 00	19 00	55 00	100 00	52 00	329 00	.....	2
258	Iron moulder.....	650 00	.....	650 00	96 00	25 00	50 00	260 00	104 00	610 00	40 00	5
29	Turner.....	100 00	.....	100 00	.....	25 00	10 00	150 00	50 00	285 00	.....	4
76	Trunk maker.....	390 00	.....	390 00	84 00	22 00	50 00	80 00	130 00	411 00	.....	4
117	Tinman.....	675 00	.....	675 00	120 00	35 00	125 00	156 00	75 00	561 00	114 00	4
16	Carpenter.....	460 00	.....	460 00	84 00	.....	25 00	370 00	60 00	539 00	.....	5
35	Silk weaver.....	300 00	.....	300 00	36 00	25 00	30 00	119 00	50 00	260 00	40 00	5
209	Laborer.....	200 00	.....	200 00	72 00	36 00	25 00	204 00	30 00	372 00	.....	6
155	Organ tuner.....	1,000 00	.....	1,000 00	240 00	40 00	150 00	200 00	150 00	880 00	120 00	6
137	Bag maker.....	468 00	.....	468 00	84 00	30 00	50 00	104 00	110 00	378 00	90 00	4
106	Grinding and polishing.....	439 00	.....	439 00	102 00	30 00	100 00	225 00	150 00	657 00	.....	7
64	Carpenter.....	624 00	.....	624 00	175 00	25 00	100 00	150 00	100 00	575 00	49 00	4
149	House painter.....	144 00	75 00	219 00	84 00	15 00	30 00	49 00	52 00	255 00	.....	2
168	Scroll band sawing.....	556 65	.....	556 65	108 00	22 00	40 00	200 00	160 00	584 00	.....	3
75	Trunk maker.....	380 00	.....	380 00	96 00	30 00	50 00	200 00	130 00	546 00	.....	5
78	Shoemaker.....	600 00	.....	600 00	.....	35 00	50 00	300 00	150 00	570 00	30 00	6
26	Silk weaver.....	600 00	.....	600 00	75 00	.....	50 00	200 00	150 00	475 00	150 00	3
205	Machinist.....	200 00	.....	200 00	72 00	20 00	150 00	156 00	156 00	584 00	.....	6
223	Wax thread machine.....	450 00	.....	450 00	54 00	27 00	50 00	198 00	101 00	450 00	.....	3
249	Wool weaver.....	300 00	.....	300 00	54 00	14 00	60 00	100 00	100 00	348 00	.....	5
143	Bag maker.....	468 00	.....	468 00	84 00	30 00	100 00	150 00	150 00	539 00	.....	8
114	Kilnman.....	354 00	.....	354 00	110 00	24 00	20 00	100 00	100 00	354 00	.....	3
63	Boot and shoe maker.....	600 00	.....	600 00	96 00	35 00	75 00	200 00	60 00	481 00	119 00	7
99	Trunk maker.....	390 00	.....	390 00	84 00	22 00	50 00	80 00	130 00	411 00	.....	4
217	Quarryman.....	300 00	.....	300 00	.....	.....	50 00	200 00	50 00	325 00	.....	3
268	Hatter.....	300 00	.....	300 00	50 00	8 00	100 00	140 00	120 00	518 00	.....	10
216	Box maker.....	350 00	.....	350 00	72 00	18 00	.....	125 00	30 00	261 00	39 00	5
142	Satchels.....	559 55	.....	559 55	78 00	30 00	75 00	100 00	150 00	559 55	.....	6
151	Millwright.....	850 00	.....	850 00	108 00	25 00	50 00	300 00	150 00	673 00	177 00	4
57	Newspaper foreman.....	650 00	.....	650 00	132 00	40 00	100 00	300 00	75 00	620 00	30 00	3
8	Glass blower.....	876 19	.....	876 19	120 00	25 00	100 00	420 00	160 00	895 90	.....	5
234	Cutlery.....	360 00	.....	360 00	72 00	15 00	.....	240 00	70 00	397 00	.....	5
214	Architect.....	1,050 00	.....	1,050 00	144 00	50 00	100 00	200 00	104 00	798 00	252 00	4
211	Laborer.....	400 00	.....	400 00	.....	30 00	75 00	240 00	40 00	405 00	.....	8
121	Harness maker.....	360 00	.....	360 00	168 00	25 00	100 00	156 00	100 00	574 00	.....	5
118	Shoe cutter.....	400 00	.....	400 00	84 00	24 00	100 00	150 00	50 00	458 00	.....	2
54	Laborer.....	700 00	.....	700 00	.....	.....	50 00	.....	260 00	100 00	.....	.....
165	Cabinet maker.....	450 00	.....	450 00	.....	.....	.....	.....	.....	450 00	.....	6
70	Engineer.....	725 00	.....	725 00	.....	75 00	100 00	400 00	100 00	690 00	35 00	6
169	Jeweler.....	720 00	.....	720 00	.....	.....	.....	.....	.....	500 00	220 00	2
226	Bag maker.....	468 00	.....	468 00	60 00	20 00	35 00	240 00	110 00	480 00	.....	4
198	Silk weaver.....	465 00	.....	468 00	72 00	27 00	90 00	144 00	70 00	468 00	.....	6
52	Superintendent oil works.....	1,200 00	.....	1,200 00	180 00	20 00	150 00	350 00	300 00	1,070 00	130 00	9

TABLE No. V.—EARNINGS AND EXPENSES—(Continued).

Office No.	OCCUPATIONS.	YEARLY EARNINGS.			EXPENSES PER YEAR.							EXCESS OF		Number in Family.
		Head of Fam-ily.	Others in Fam-ily.	Total.	Rent.	Fuel.	Clothing.	Groceries.	Meat and Vege-tables.	Sundries.	Total.	Earnings over Expenses.	Expenses over Earnings.	
9	Manufacturer of Tobacco.....	936 00		936 00	103 00	30 00	150 00	250 00	250 00		788 00	148 00		4
92	Satchel maker.....	500 00		500 00	72 00	22 00	50 00	200 00	100 00	30 00	474 00	26 00		4
135	Carriage body maker.....	550 00		550 00	96 00	30 00	50 00	150 00	100 00	150 00	576 00		26 00	6
172	Carpenter.....	420 00		420 00	72 00	21 00	80 00	190 00	52 00	20 00	435 00		15 00	5
206	Trunk maker.....	700 00		700 00	120 00	15 00	50 00	288 00	156 00	30 00	659 00	41 00		5
77	Shoemaker.....	700 00		700 00	96 00	25 00	100 00	200 00	100 00	79 00	600 00	100 00		6
96	Traveling bags.....	650 00		650 00	84 00	23 00	40 00	150 00	86 00	75 00	458 00	192 00		6
61	Laborer.....	195 00	52 00	247 00	48 00	15 00	15 00	156 00			234 00	13 00		2
59	Blacksmith.....	400 00		400 00	60 00	30 00	75 00	200 00	50 00		415 00		15 00	4
44	Bridge tender.....	822 30		822 30		15 00	75 00	500 00	220 00		810 00	12 80		6
128	Bag maker.....	559 00		559 00	78 00	30 00	75 00	100 00	150 00	126 00	559 00			9
251	Silk weaver.....	310 00	110 00	420 00	84 00	15 00	100 00	125 00	104 00		428 00		8 00	7
187	Machinist.....	900 00		900 00		40 00	100 00	360 00	200 00	60 00	760 00	140 00		9
156	Jeweler.....	375 00		375 00	60 00	15 00	15 00	160 00	40 00	85 00	375 00			12
227	Foreman.....	500 00	200 00	700 00	72 00	10 00	25 00	250 00	50 00	15 00	422 00	278 00		5
132	Harness maker.....	412 00	104 00	516 00	72 00	30 00	100 00	175 00	52 00	50 00	479 00	37 00		7
148	Overseer.....	459 00		459 00	108 00	20 00	30 00	150 00	84 00		392 00	67 00		2
134	Bag maker.....	409 67		409 67	60 00	30 00	100 00	100 00	125 00	50 00	465 00		55 33	4
18	Machinist.....	500 00		500 00	180 00	25 00	50 00	150 00	50 00	45 00	500 00			3
203	Saddle and pad maker.....	400 00		400 00	156 00	30 00	56 00	175 00	100 00	75 00	592 00		192 00	5
218	Shoemaker.....	676 00		676 00	96 00	22 00	154 00	175 00	100 00	119 00	666 00	10 00		6
139	Bag maker.....	453 28		453 28	72 00	30 00	75 00	100 00	150 00	125 00	552 00		98 72	6

TABLE No. VI.—BLANKS Nos. 2 AND 3.

Office Number.	OCCUPATION.	CHILDREN BETWEEN 10 AND 15 YEARS.		CHILDREN UNDER 10 YEARS.		Hours per day.	Hours per week.	WAGES PAID PER DAY.		Children that attend School.
		Boys.	Girls.	Boys.	Girls.			Boys.	Girls.	
216	Paper Boxes.....	4	30	1	4	10	60	55	35	.....
219	Bleaching.....	3				9 ³ / ₄	59			
202	Bleaching.....	4					59	62		
186	Brass Finishing.....	5		2		9	54			
24	Brass Finishing.....	15				8	48	50		
161	Paper Boxes.....	20				10	58	50		
176	Silver Plating.....	5				10	59			
195	Dyeing.....	5				10	60			
57	Printing.....	1				10	60	50	25	
19	Iron Foundry.....	6				10	60	75		
8	Glass Blowing.....	11				7	42	80	38	10
121	Harness Making.....	1				10	60			
204	Harness Making.....	10				10	59			
212	Gold Chain Making.....	5	4			10	59			
114	Pottery.....	6			2	10	60			
211	Foundry.....	10				10	60	80		
11	Sewing Machines.....	50	8			10	60			
115	Pottery.....	41	25			10	58	75	60	
65	Shoemaking.....	3	2			10	60			
77	Shoemaking.....		3			10	60			
152	Shoemaking.....	12	4			10	60	38	30	
154	Shoemaking.....	2	6			10	60			
198	Silk Weaving.....	30	150			10	60	55	45	
206	Trunk Making.....		20			10	60			
89	Traveling Bags.....	22	28			10	60	60	42 ¹ / ₂	
140	Traveling Bags.....	2				10	59			
126	Traveling Bags.....	18	4	2	2	10	59			
127	Traveling Bags.....		2			10	59			
268	Hatter.....	3								
273	Jeweler.....	10	6			10	59			
244	Silk Weaver.....	6	18			10	60	50	40	
168	Scroll Sawing.....	58				10	59			
53	Jeweler.....	2	1			9	54			
238	Jeweler.....	5	3			10	60			
156	Jeweler.....	2	2			10	60			
158	Jeweler.....	3	5			10	60			
240	Engraver.....	3	3			10	60			
201	Shoemaker.....	50	30	10	10	10	60	75	60	
51	Jeweler.....	6	7			9	53			
151	Carpenter.....	20				10	58			
161	Shoemaker.....	3	15			10	60			
276	Fruit Jars.....	40	30			10	59 ¹ / ₂			
188	Fancy Goods.....	100	30	40	30	10	59			

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CHAPTER II.

Agricultural Development.

ITS RELATIONS TO LOCAL COLONIZATION,

AND THE

UNIMPROVED LANDS OF NEW JERSEY.

NEW AND DIVERSIFIED INDUSTRIES

ESSENTIAL TO GENERAL PROSPERITY.

CHAPTER II.

AGRICULTURAL DEVELOPMENT; ITS RELATIONS TO LOCAL COLONIZATION AND THE UNIMPROVED LANDS OF NEW JERSEY; NEW AND DIVERSIFIED INDUSTRIES ESSENTIAL TO GENERAL PROSPERITY.

“Wealth arising from the solid improvements of agriculture is most durable. No equal capital puts into motion a greater quantity of productive labor than that of the farmer. Not only his servants, but his cattle, become producers. Nature, too, labors along with man. Her work remains as a gain after deducting everything which can be regarded as the work of man.”*

The State of New Jersey has a rich heritage in her unimproved lands, the aggregate of which is equal to one-third the area of the State, and the bulk of it lies in the southerly section, with such an uncomely surface as to elicit from a multitude of non-resident observers, disparaging contrasts. And yet, it would be inexcusable in us to arraign the projectors of some of the main-lines of travel across our domain for being the unconscious promoters of misconception in reference to the natural resources of sections of our State.

It is believed that the functions of this new State Department cannot be more usefully employed than in an endeavor to advance agricultural and mechanical industries, neither of which have much more than approximated their maximum develop-

*Adam Smith.

ment. We propose on the present occasion to give attention to agriculture.

Since agriculture is regarded as the "basis of all industries and the primary source of all wealth," no State can afford to be indifferent to its development, in proportion to the sufficiency of climate, soil and other inherent advantages possessed. Our State cannot become an agricultural State in the sense that many of the far Western States are. It is probable however, we can diversify and prosecute this industry with great advantage, until cereal products for domestic consumption, are supplanted by the West.

We started with a terse tribute to agriculture, not easily disproved. It is obviously true that rural life and rural occupations give promise of the highest measure of health and rational happiness, together with opportunities for moral and social improvement and elevation, to the extent of one's taste and aptitude therefor. We do not therefore cease to wonder that multitudes in the greatest extremity of city impoverishment and enforced idleness, persistently, and with the most stolid indifference resist appeals in the face of pressing want, to exchange the uncertainties and inevitable discomforts of a city life, for a reasonable if not absolute certainty of betterment in whatever constitutes manliness, independence and competency, acquirements well-nigh inseparable from an industrious and frugal life devoted to agriculture.

It cannot be disguised that the industrial crisis which has paralyzed our national vitality is the legitimate offspring of an unwonted expansion of manufacturing industries. That production and consumption are unequal, is a stale announcement, but it has, nevertheless, subverted prosperity for an indefinite period, and entailed aggravated discontent and suffering upon all industrial communities.

The absorbing question in the public mind is not only how shall we increase the demand for labor and the products of labor, but how shall labor be better rewarded?

Mr. Wells, through the medium of the *North American Review* enquires: "What is to be done with the labor that improved machinery and methods have made in excess of demand?" He replies: "Most certainly either in one of two

alternatives. Either new wants have got to be found or created, for the supplying of which a larger field for the employment will be afforded than now exists, or else the emigration of labor from the country and the formation of a permanent pauper class among us will begin."

We cannot couple excessive agricultural expansion with that of manufactures for the possibility does not exist, and it is questionable whether the products of the soil in this country could ever reach a maximum that would occasion embarrassment to the tillers of our vast landed domain, only in the ratio that excessive production will diminish profits in agricultural pursuits, no less than in others.

While agriculture does not rank among pursuits which captivate the wealth-seekers and the ease-lovers, when sufficiently diversified, it is second to none in its immunity from perilous vicissitudes, and in its assurances of a fair average remuneration for capital and labor devoted to its prosecution. The average agriculturalist seldom has occasion to be otherwise than hopeful that his annual resources will be adequate to the maintenance of his family. With ample capital, in combination with educational and tasteful acquirements, there is no pursuit more compatible with leisure and personal gratification, and no investment more utterly safe and stately remunerative, than agriculture. But it no longer needs extended laudation. Its importance and magnitude have universal recognition, but never, as a source and basis of national wealth, has it been so impressively illustrated and diversified on this side the Atlantic, as in Agricultural Hall at Philadelphia two years ago. All American industries received a new impulse at our Centennial. The sources of competition in all the varied departments of industry were there brought tangibly in competitive view not only to elicit our admiration, but to startle us with ocular proof that achievements in industry and science, are shared with us in a greater or less degree, by all civilized nations. Perhaps the Agricultural Hall exhibit was more assuredly serviceable to this country at large, than any other collective display within the park.

Before we come to the specific design of this paper, we have to indulge in a little more generalization, with the view to en-

force upon the attention of our people the importance of the local development of agriculture.

Predictions in reference to the future of our country have a reliable basis in state and national statistical information extending back a half century. Our industrial destiny has an important bearing upon all competitive nations, and it is not unusual to meet with trans-atlantic foreshadowings of American achievements in that line.

That this is to be "the land of plenty for a great people," is by no means improbable. The *Journal des Debats*, says: "The United States are still the promised land for agriculturists. If a European artisan would commit an act of folly to go and seek fortune there, where only misery awaits him, rural laborers may go there with almost the certainty of acquiring ease. In those vast regions, an *agricultural* population of 200,000,000 might be planted, and they could live with ease."

We have italicised the word *agricultural*, and are tempted to do a little harmless ciphering to discover to what these French figures will lead, ignoring fractions.

The census of 1870 makes the population of the United States 38,558,371, of which 5,922,471 were engaged in agriculture, about 15 per cent.; or 40 per cent. of those engaged in *all* occupations.

French statistics show that 60 per cent. of the French population is engaged in agriculture. Upon that basis, 200,000,000 of agriculturists in this country would give us a total population of about 335,000,000. We should need 1,330,000,000 upon *our 15 per cent.* basis, to swell our agricultural population to 200,000,000, which the *Journal des Debats* says this continent can support.

When we remember that the latest published estimate of the population of the earth is 1,439,145,300, the above calculation possesses peculiar interest to those who contemplate making the United States their permanent residence, and does it not likewise admonish us that the French 60 per cent. ratio of agricultural population ought to be speedily substituted for *our 15 per cent.* of agricultural population.

From 1860 to 1870 the increase in the population of the United States was in round numbers, 22 per cent. At this rate of increase until the year 2000, we would have about 500,000,000.

From 1850 to 1860, the increase was 35 per cent., which extended to 2000, would give us *only* about 1,700,000,000. It will diminish the instinctive incredulity respecting these figures to know, that the average decennial increase of the population of the United States since 1790, is 33.2 per cent., and furthermore the best data show that the increase of the population of the globe since 1860, is about 27 per cent.

Upon the basis of 474.49 population to the square mile, which the above figures allot to the year 2000, New Jersey's quota would be 3,947,840. The following are ten of the most densely populated countries and states of the world with the average population to the square mile :

Belgium	459.80	China	260.96
Holland	269.24	Java	253.65
Great Britain and Ireland.....	262.03	Italy	224.38
Massachusetts	186.84	Connecticut	113.15
Rhode Island.....	166.43	New Jersey	108.91

The total number of farms in the United States in 1870, was 2,659,985, the sizes of which are thus graded :

Under 3 acres.....	6,875	Between 50 and 100.....	754,221
Between 3 and 10.....	172,021	“ 100 and 500.....	565,054
“ 10 and 20.....	294,607	“ 500 and 1,000.....	15,873
“ 20 and 50.....	874,614	Over 1,000.....	3,720

The average acreage of farms in the United States in 1850 was 203; 1860, 199; 1870, 153. In New Jersey in 1850, 115; 1860, 108; 1870, 98.

The number of farms in New Jersey in 1870 was 30,652:

Under 3 acres.....	70	Between 50 and 100.....	9,415
Between 3 and 10.....	2,993	“ 100 and 500.....	7,299
“ 10 and 20.....	3,476	“ 500 and 1,000.....	15
“ 20 and 50.....	7,376	Over 1,000.....	8

Percentage of unimproved land in farms to total land in farms :

United States, 1850, 61.5; 1860, 59.9; 1870, 53.7. New Jersey, 1850, 35.7; 1860, 34.9; 1870, 33.9.

Land in farms in New Jersey, 1850, 2,752,946 acres; 1870, 2,989,511 acres.

Improved, 1850.....	1,767,991	|	Improved, 1870.....	1,976,474
Unimproved, 1850.....	984,955	|	Unimproved, 1870.....	1,013,037

VALUATION OF LANDS IN SEVEN STATES.

	1850.	1860.	1870.
New Jersey.....	\$43 67	\$60 40	\$86 14
New York.....	29 00	38 00	57 36
Pennsylvania.....	27 33	39 00	58 00
Delaware.....	19 75	31 00	44 40
Connecticut.....	30 50	36 00	53 00
Rhode Island.....	30 82	37 00	42 95
Massachusetts.....	32 50	34 00	42 64

Area in 1870—United States, 3,603,884 square miles; population per square mile 10.70. New Jersey, 8,320 square miles.

Population per square mile in 1850.....	58.84
Population per square mile in 1860.....	80.77
Population per square mile in 1870.....	108.91

Percentage of increase of population in the following states, between 1860 and 1870:

New York.....	12.94	|	Pennsylvania.....	21.19
Massachusetts.....	18.38	|	New Jersey.....	34.83

Six most densely populated states, New Jersey being *fourth*:

Massachusetts,	New Jersey,
Rhode Island,	New York,
Connecticut,	Pennsylvania.

We derive the following statistics from a recent article by D. A. Wells, printed in the *International Review*:

1. Table showing the relation of property to population in the different states in the Federal Union, on the basis of the census valuation of 1870 :

	Per capita.		Per capita.
1 New York.....	\$1,483	20 Oregon.....	\$567
2 Massachusetts.....	1,463	21 Nebraska.....	563
3 Connecticut.....	1,441	22 Maine.....	555
4 Rhode Island.....	1,366	23 Minnesota.....	520
5 California.....	1,140	24 Kansas.....	518
6 Pennsylvania.....	1,081	25 Kentucky.....	457
7 New Jersey.....	1,038	26 Louisiana.....	444
8 Ohio.....	838	27 West Virginia.....	431
9 Illinois.....	835	28 Tennessee.....	395
10 Maryland.....	824	29 Virginia.....	334
11 New Hampshire.....	793	30 Arkansas.....	382
12 Delaware.....	777	31 South Carolina.....	294
13 Indiana.....	754	32 Mississippi.....	252
14 Missouri.....	746	33 North Carolina.....	243
15 Nevada.....	732	34 Florida.....	235
16 Vermont.....	711	35 Georgia.....	226
17 Wisconsin.....	665	36 Alabama.....	202
18 Michigan.....	607	37 Texas.....	194
19 Iowa.....	601		

2. Rate of taxation per thousand dollars in the several states :

1 Nevada.....	\$26 34	20 Maryland.....	\$10 30
2 Louisiana.....	21 85	21 Illinois.....	10 28
3 Arkansas.....	18 33	22 Georgia.....	9 79
4 Mississippi.....	17 86	23 Kentucky.....	9 48
5 Maine.....	15 36	24 Vermont.....	9 07
6 Nebraska.....	14 38	25 West Virginia.....	9 03
7 Alabama.....	14 77	26 North Carolina.....	9 02
8 Kansas.....	14 15	27 Indiana.....	8 51
9 South Carolina.....	13 30	28 New Jersey.....	7 88
10 New Hampshire.....	12 88	29 Connecticut.....	7 83
11 Iowa.....	12 62	30 Wisconsin.....	7 67
12 California.....	12 25	31 Michigan.....	7 52
13 Massachusetts.....	11 68	32 New York.....	7 47
14 Minnesota.....	11 57	33 Rhode Island.....	7 31
15 Oregon.....	11 26	34 Texas.....	7 10
16 Virginia.....	11 26	35 Tennessee.....	6 79
17 Florida.....	11 23	36 Pennsylvania.....	6 44
18 Missouri.....	10 82	37 Delaware.....	4 30
19 Ohio.....	10 52		

3. Rate of taxation per capita in the several states :

1 Nevada.....	\$19 30	7 Rhode Island.....	\$9 98
2 Massachusetts.....	17 10	8 Louisiana.....	9 71
3 California.....	13 95	9 Ohio.....	8 83
4 Connecticut.....	11 28	10 Illinois.....	8 59
5 New York.....	11 07	11 Maine.....	8 53
6 New Hampshire.....	10 22	12 Maryland.....	8 49

13 Nebraska.....	\$8 35	26 Mississippi.....	\$4 51
14 New Jersey.....	8 18	27 Kentucky.....	4 34
15 Missouri.....	8 08	28 South Carolina.....	3 92
16 Iowa.....	7 58	29 West Virginia.....	3 89
17 Kansas.....	7 33	30 Virginia.....	3 76
18 Pennsylvania.....	6 96	31 Delaware.....	3 34
19 Vermont.....	6 46	32 Alabama.....	2 99
20 Indiana.....	6 42	33 Tennessee.....	2 69
21 Oregon.....	6 39	34 Florida.....	2 64
22 Minnesota.....	6 02	35 Georgia.....	2 21
23 Arkansas.....	5 91	36 North Carolina.....	2 20
24 Wisconsin.....	5 10	37 Texas.....	1 38
25 Michigan.....	4 57		

Of course these figures are accessible to all, but so few people, unfortunately, take the trouble to consult statistics, or regard their meaning only when brought to their attention at an opportune moment, that we deemed these parallelisms worthy of a place in this connection.

It will gratify laudable State pride to see New Jersey occupy such relative eminence in the accompanying tables, and the significance of the gradation in the several exhibits, should have an important bearing upon the domestic colonization we are advocating. Our first thought was to copy only sections of these tables, but the relations of taxation to colonization are so patent, and the advantages proceeding from these comparisons are so conspicuously on the side of our State, that no Jerseyman will regret to see them reproduced upon this occasion in their entirety.

It is but proper to state that since these figures were compiled the State tax has been reduced from one and a half to one mill on the dollar, and there is every promise that a further reduction will be made the present year by which the State tax will be only a half mill on the dollar. This state of facts will place New Jersey among the very lowest in both the above tables. In the second table the rate of taxation per thousand dollars will be \$2.63, much less than any other State. In the third table, the per capita tax will be \$2.73, less than any State except Tennessee, Florida, Georgia, North Carolina and Texas, which by reason of containing large numbers of untaxable persons have a lower rate per capita, while the taxable persons and property have to bear a higher rate.

The highest success in agriculture will never be attained in this country until the ownership of the soil is multiplied many

fold. Forcible illustrations of this assumption abound across the ocean. France has an area one-eighteenth as large as the United States, and supports a population only 2,000,000 less than that of this country. Fifty-four per cent. of the territory of France is under tillage, five-eighths per cent. in wine lands. Five-sixths, including mountains and rivers, is utilized for agricultural purposes. It is represented that there are six million land proprietors in France, fifty thousand of whom own approximately, seven hundred acres; five hundred thousand, seventy acres; and five million from seven to seventy acres. About 60 per cent. of her population is devoted to agriculture, and 75 per cent. of her agricultural laborers are proprietors of land. Does *agricultural success* in France need further elucidation.

In civilization, industrial development and accretion of wealth, all other nationalities are emulous of England, but not of her pre-eminence in pauperism. To what extent this great evil would have been diminished by a more liberal distribution of her land estates, is too complex a problem for present solution. The following figures are taken from a report on labor in Prussia, which possess considerable agricultural significance. Proportion of agricultural labor in Russia, 86 per cent.; Italy, 77; France, 51; Belgium, 51; Prussia, 45; England, 12. The author adds: "If England had to-day two hundred thousand more small farms, would she not have five hundred thousand less paupers?"

But we are indebted to English statesmen and philanthropists for good council, and much practical emancipation in that Kingdom from the evils of density of population. The experience in England is that "emigration of capital and labor has always increased both population and wealth at home. When a Hampshire peasant emigrates to Australia, he very likely enables an operative to live in Lancashire. Besides making food for himself, he sends more home to the manufacturer, who in turn, makes clothes and implements for the colonist."

To illustrate and sustain the chief purpose of this article, which will subsequently appear, we furthermore quote from a debate in the House of Commons in 1843, on systematic colonization, language as appropriate to our domestic colonization as it was to that under discussion in England. Said the speaker: "When I ask you to colonize, *what is it but to carry the superfluity of one*

part of one country to the deficiency of the other? To cultivate the desert by means that are idle here? In one simple word, to convey the plough to the field, the workman to his work, the hungry to his food. * * * I direct your attention to the United States, the greatest colony the world ever saw, but by no means the only proof of the immense extension given to trade by planting settlers on new and ample fields. What would have been the wealth and population of this country had the United States never been peopled? I think it will be admitted that, taking the United Kingdom and the United States alone, the fact of colonizing that single country has at least doubled the numbers and wealth of the English race." The italics are ours.

The United States has such a prodigious unoccupied expanse of fertility, and vast excess of non-producing, deluded dwellers in over-crowded cities, that infinite gain to humanity and to the resources of the nation would speedily ensue, could these two widely separated auxiliaries become permanently conjoined for the alleviation of a grievous exigency.

Sir John Barnard Byles wrote many years ago, "that the main producing forces of a country are man and the land; bring them together, and you develop an all sufficing, super-abounding plenty. * * * *Many of the wan, sickly, degraded, restless, dangerous population of the towns are transformed into the well-grown, healthy, virtuous, and industrious cultivators of land.* We are assured that it is the general diffusion of property in land that has mitigated the horrors of the late political convulsions on the continent."

As the predominant purpose of this paper is to promote local colonization to advance individual and State interests, it will impart emphasis to the subject to know that colonization in general, as well as local, is occupying the attention of individuals and communities elsewhere. The most vigorous and systematic movement in this direction that has come under our observation, has been organized in Boston, and merits detailed notice.

In December, 1877, "a Board of Aid to Land Ownership," was formed in Boston, Massachusetts, its object being "to promote associate migration to fertile unoccupied lands; to aid their development into agricultural townships and homesteads; by these means contribute to a re distribution of labor,—its diversion

from trade and manufacture, where in surplus, to tillage of the earth."

Committees representing this organization, made four extensive tours of observation through Western and Southern States, occupying five months time. It was the purpose of this board to secure an eligible tract and have all the preliminary arrangements adjusted before the following Spring, so that colonists might be transferred to their new Western homes in time for early planting operations. This, however, was found to be impracticable.

The board was chartered by the Massachusetts Legislature, and capital subscribed for the purchase and development of lands. The first tract which commended itself to the board was an Indian reservation containing three hundred thousand acres, in Nebraska. But the Washington authorities did not quite sanction the purchase, owing to constructive legal impediments, so it was abandoned. The second chosen locality was in Kansas, the title of which being in a railroad company, the alternate sections constituted an insurmountable barrier to that purchase. The third selection was also in Kansas, but owing to some question relating to foreign corporations having no status in that State, the purchase of this tract was negatived.

The successive disappointments which retarded the operations of these public spirited benefactors, will only result, as they announce, in a year's postponement of their scheme of benevolence. After the board determined not to renew their researches in the West, its attention was invited to lands in the Middle States. One of the committees was instructed to reconnoiter sections of Virginia, North Carolina, Kentucky and Tennessee last spring, so that colonizing might progress next fall.

The report of the Board to the public, upon the subject of Western or Southern migration, closes with the following sentence, "six months of travel, observation and study of the subject, confirm the belief that land-ownership for agricultural development is the true remedy for existing distress of the unemployed, and the sure antidote to communistic agitation. Hence, as the greatest boon practically available to the people, it should be agitated and promoted by all who seek the welfare of the nation."

In our view the Boston gentlemen very wisely surrendered their proclivities for Western settlements, and turned their attention to localities much nearer home. They concluded that as the centre of Kansas and Nebraska were sixteen hundred miles from Boston, it would be "an extreme distance for efficient management."

When questions relating to migration or colonization are pending, diversity of taste, social and other influences, will very properly determine individuals and associations in the choice of a location, but in the absence of special reasons for a more remote selection, some of the Middle States present extremely inviting opportunities for agricultural investment and enterprise. We have long been of the opinion that neither the extreme nor the intermediate "West" combines the elements of agricultural, manufacturing or commercial success, to such a degree as to practically monopolize emigration, especially of our own countrymen. It is well known that there are in the Middle States vast areas of some of the best lands on the continent, classified as "unimproved," of sufficient magnitude in detached bodies, to form respectable sized States, replete with all the essentials of climate, fertility, water, forest, salubrity, etc., lacking, however, in some sections, present railroad facilities, but in this particular no less in need yet much more likely to be deprived for years to come, than numberless reservations more distant and inland.

The following tables, taken from the census of 1870, very forcibly indicate that public attention has been singularly diverted from eligible colonizing districts, more accessible than the competing West, both to the great centres of consumption, and to the points of vastly increasing foreign shipment of various agricultural products:

States.	Unimproved Lands.	Percentage of unimproved lands in farms to total lands in farms.
Virginia.....	9,980,871	55.
West Virginia	5,948,140	69.7
Tennessee.....	12,737,936	65.1
North Carolina.....	14,576,668	73.5
Kentucky.....	10,556,256	56.6
Kansas.....	3,685,876	65.2
Nebraska.....	1,426,750	68.8
Iowa.....	6,145,326	39.5

We do not claim by any means that this vast excess of unimproved lands in the Middle States named above, has a present productive value equal to the same class of lands in the three Western States. It is well understood that a very large proportion of the former is mountain land, both inaccessible and wholly untillable, and it is probable, also, that there is a very considerable percentage whose primitive fertility has been exhausted by excessive cropping, the improvident farmers not only failing to rotate, but wilfully repudiating fertilization.

Previous to the war, there were special reasons why the Middle States referred to would not largely attract emigration from any quarter, but those reasons do not exist now, and it may be regarded, in many aspects as a good omen, that the Massachusetts promoters of colonization have taken the lead in a vigorous and inspiring movement in that direction.

An additional point of interest will be conveyed to the reader by quoting the Massachusetts plan of extending aid to deserving applicants:

“The plan is to aid colonists, by an advantageous purchase of land in large areas, and its sale in small parcels, at low prices, on credit mainly of years; by systematic plans of towns, streets, farms and building restrictions, to the benefit of all; by an arrangement for reduced rates of transportation; loan of some labor-saving machinery, well-boring apparatus, stump machinery, etc., without charge; construction of school houses, and aid to churches; furnishing of steam or water power, portable mills, &c.; as far as practicable, securing a population that will ensure a good neighborhood; sale of seed, fuel, lumber, tools, &c., &c., to colonists at minimum cost; construction and ornamentation of roads; encouraging of the tree culture; prohibiting, in original deeds, manufacture of and traffic in intoxicating drinks; dispensing with fences; establishing barrel factories, or drying and canning apparatus; employing an efficient superintendent, who shall teach the best methods of farming, &c., &c.”

“It is apparent that it is impossible for the Board to supply capital in addition to the above requirements, to defray the entire expense of removal, outfit, and temporary support of families. This must be the work of individuals, church societies, communities, or supplied by an auxiliary fund.”

This Massachusetts enterprise arrested our attention at a glance, and commended itself to us in the light of an example worthy of imitation, and possibly in consummation of similar associated movements within the borders of our own State.

There is nothing in the preceding that lacks a literal and definite application to the local State interests it is the purpose of this treatise to subserve. Colonization and agriculture have been considered thus far in the abstract, with a general relevancy to national aggrandizement. It remains for us to give definite attention to, and consider colonization in its relations to the development of agriculture and affiliated industries, within our own commonwealth.

One of the preceding tables shows that there are a million acres of unimproved lands in this State, the bulk of which lies in what is called South Jersey, in the counties of Ocean, Burlington, Atlantic, Cumberland, Camden and Cape May, the order indicating their scale of distribution. These unimproved lands have for so many years been talked about and written about, that their general characteristics are pretty well understood throughout the State, and still they lie in vast bodies, forbidding in appearance, seldom explored, and unshorn of primitive forestry except from time to time, by insatiable flames.

Since there is no constraining motive other than primarily to advance conceivable important State interests, it will be our purpose to refrain from over-wrought appreciation of the undeveloped natural advantages and resources of South Jersey. Careful and somewhat extended observation and inquiry regarding that section, incite us to endeavor to enforce impressions and convictions thereby made upon this department, on the public mind.

Enterprise, with self-reliant perseverance and skill, have in several localities, transformed sections of unreclaimed wilderness into miles square of productive homesteads, the unrivalled abodes of successful cultivators of the soil, surrounded by educational and religious edifices of unusual amplitude and beauty, streets and blocks of stores and warerooms which, in size and variety, are unsurpassed in other towns and cities in the State, a century old at the birth of some of these wilderness-wrought rivals.

“There is a very general want of correct knowledge among the

citizens of other States, about the soil, climate and natural resources of New Jersey. Looking at our State from an agricultural point of view, farmers living outside of State lines have the most fallacious ideas about the character of the soil for crop raising. Even now there are thousands of farmers who conscientiously believe that a large extent of the territory of this State is a sand bed, capable of producing only water melons and sweet potatoes, and so light that the wind blows it about like so much chaff. * * That there is a considerable area in our seaboard counties of this light, sandy soil, no one familiar with the State will deny. But even this soil light in body as it is, is susceptible of improvement at an outlay that will come within the compass of every thrifty and intelligent farmer. There are hundreds of illustrations of this in Monmouth, Ocean and Burlington counties, where land of this sort has been brought up, by careful and judicious handling, from an almost impoverished condition, to a state of high fertility, producing annually maximum farm crops, and some of the best paying fruit farms in the State. The soil was originally of this quality. Every practical farmer knows, that there is such a thing as spending more money on poor lands in the way of improving them than the returns will ever warrant. Of this character of soil, New Jersey has but very little."

"But of late years this phantom has been dissipated, and parts that were looked upon as a barren wilderness have been transformed into productive garden spots, with towns springing up among scrub oaks and pines, showing thrift to the passers-by and affording independent and happy homes to thousands, where they enjoy social and religious advantages, good schools, good roads, and good markets for their products. Noticeable among these new places are Egg Harbor City, Hammonton, Bricksburg, and last and largest, Vineland. The soil surrounding each of these towns was, until recently, thought to be some of the poorest in the State, but the whole has been changed and now one can find growing, farm, garden and fruit crops, fair in quality and quantity on ground that a few years ago was tenanted only by scrub oak and pines.*"

The unimproved uplands in South Jersey are so much alike

*Report of New Jersey Centennial Commission.

in their general features that they need no special classification for our present purpose. It may be said that as a rule, the sections which have been improved fairly illustrate the capabilities of tens of thousands of acres which, so far as cultivation is concerned, are in their original condition.

It would be natural for people living out of the State and who are unfamiliar with the history of this section, to inquire why these immense tracts of good land, for the most part susceptible of the highest grade of productiveness, have been so long unimproved. In explanation, we may state in general, that the bulk of these lands have been for very many years in possession of great landed proprietors, who, for various reasons, were unwilling to sell them. It is probable they were originally bought at comparatively low prices, and were supposed to be advancing in value from year to year in excess of taxes, by the growth of wood and timber. They undoubtedly have been desirable properties to hold, until within the last twenty-five years, especially by estates not dependent upon income for their maintenance. Successive growths of timber have been removed, and the process of cutting and marketing wood and burning charcoal, has been going on with probable profit for several generations.

A good many years ago, there were large numbers of iron furnaces and forges in successful operation in this region, furnishing a regular market for wood and charcoal. These profitable sources of revenue from originally low priced lands, enriched their owners, some of whom or their representatives, still hold tracts virtually unbroken, and in some cases no less willing to part with them than they were years ago.

The second and third growths of wood have been removed from tracts which were accessible to the New York and Philadelphia markets. In many localities white, red and other varieties of oak may still be found, but the recurrence of devastating fires from locomotives and tramps, will sooner or later determine the proprietors of exposed tracts, to embrace opportunities to place them on the market for sale. This is the preliminary step to agricultural development in South Jersey, and more will be said upon this point by and by.

The character of these uplands in many cases is heavy clay, but generally a sandy loam underlaid with a mixture of gravel

and clay. It is free of stones and rocks, thus rendering it easy of cultivation after it has been relieved of its wood and stumps. It retains moisture well, and rarely needs surface or under draining. Crops do not suffer more than in other localities from droughts.

Experienced farmers in these sections say that as a rule, the same crops can be produced from these soils as from the soils of Pennsylvania and New York, and with much less labor and fertilization. The retentive power of production without manure, has in these soils many remarkable examples.

In Atlantic county, near Columbia, we were credibly informed of one field which has produced corn and rye for *seventy* years without any fertilizers, and the yield of the last crop was reported to have been twenty-five bushels of shelled corn per acre.

But it is unquestionably true that for the most part, these lands are better adapted to the cultivation of large and small fruits, than cereals. This is especially so of lands lying in near or somewhat remote contiguity to railroads leading to consuming towns and cities. Experience, which of course determines the appropriate and profitable uses to be made of lands, has demonstrated that very large sections of Burlington, Camden and Atlantic counties, skillfully handled, will produce three times as good results devoted to fruit and garden products, as they will to the production of cereals and grasses.

Grapes too, are yearly receiving more attention, as the soil and climate betoken adaptability to their successful culture. Atlantic and Cumberland counties possess more requisites for success in grapes, both for marketable fruit and wine making, than the adjoining counties. That this industry has passed the experimental point has full and infallible attestation at home and abroad. New Jersey wine vaults in magnitude, are but miniatures of what will be in the near future. Foreign visitors to these vaults two years ago, bore emphatic testimony to the near approach of New Jersey wines to their own productions, and some brands were admitted to full equality.

At Hammonton, about four thousand acres are now planted with strawberries, raspberries, blackberries, pears, apples, grapes, and peaches, which yield profits from \$50 to \$250 per acre.

In Egg Harbor City and vicinity, one thousand acres are in

grapes alone, which produced in 1877 more than five million pounds, most of which were made into wine.

We are informed by owners of bodies of land in the township of Hammonton, within one and a half miles of the railroad, and situated on good roads and avenues, that sales are being made from time to time to actual settlers, upon easy terms, at from \$15 to \$25 per acre. Of course lower prices for equally good soil prevail in localities more remote from railroad and other advantages. When we remember that these plantations are within easy access to superior church and school accommodations, and surrounded by other social advantages rarely met with in new agricultural settlements; and moreover, with Philadelphia and New York markets only a few hours distant, there would seem to be no lack of incentive for earnest, honest and industrious cultivators of the soil, to gravitate hither. Vine-land and other colonizing centres in South Jersey, present unequalled attractions to staid and resolute agriculturists of all nationalities.

Much of the thrift and well-to-do aspect of the sections we have under immediate consideration, are due, we have no doubt, to a cause that will readily commend itself to the class of colonists we would interest upon this occasion. We refer to the absence of the sale and excessive use of liquor, simply to emphasize its unquestioned subserviency to the best interests of all classes.

It is a fact worthy of special mention, and ought to disarm any captious criticism our urgency of habits of temperance may awaken, that the pioneer promoters of colonization in some of these localities in South Jersey, did not interdict the public sale of intoxicating liquors primarily, at the dictation of moral convictions upon the subject of total abstinence, but to avoid temptation and guard the rapidly forming communities against the universally recognized evils of intemperance, from motives of great public interest.

It is so seldom we have the opportunity to illustrate in combination, the moral, social and pecuniary benefits resulting to entire communities emancipated from the ill effects and burdens of intemperance, that we have been impelled again to advert to the paramount importance of united efforts to suppress it.

The infrequent crimes and the inconsiderable expense for maintaining the poor in these exceptional settlements, are factors worthy of mention, and have an emphatic significance in their contrasted relations to other communities unblessed with these conservative precautions.

The township of Hammonton has a population of eighteen hundred. There is not a bar-room in the township. Intemperate men who move into the township, almost always abandon the habit of using liquor.

The average cost of maintaining the poor, who are generally "non-residents," is about \$30 a year. The constable receives \$25, salary, and is really "unknown except to the lawyers and justice." "There has never been a case of arrest here for disorderly conduct."

In Landis township, of which Vineland is the centre, there is a population of between ten and twelve thousand. The following figures have an obvious interpretation :

POLICE EXPENSES.		POOR EXPENSES.	
1867.....	\$50 00	1867.....	\$400 00
1868.....	50 00	1868.....	425 00
1869.....	75 00	1869.....	425 00
1870.....	75 00	1870.....	350 00
1871*.....	150 00	1871*.....	400 00
1872.....	25 00	1872.....	350 00

We think it would be very difficult to point to a section of country which combines so many natural and diversified advantages for agricultural pursuits, as are found in South Jersey. The prairies of the West excepted, there surely are no *new* lands so readily subdued and cheaply made productive, as these. For a man with industrious and frugal habits who desires to locate permanently to engage in cultivating the soil, would make a mistake to "go West" without previous careful investigation of what New Jersey has to offer him. Here he would find a variety of climate and soil suited to his special wants. Prices of land and terms of payment would be very much under his own control, if he evinces capacity and integrity. Nowhere else could he

*This was the year the railroad was built.

start with small means, with such assurances of speedily gaining a comfortable homestead free from encumbrance.

If he has children old enough to pick berries, they can earn from fifty cents to \$2.00 a day in the service of their neighbors, and he can always find employment for himself at odd times, while his own crops are growing, and thus supplement his small accumulations.

There are numberless cases which could be cited to prove what we have asserted. We will briefly mention two or three.

F. M., a Swiss, went to Hammonton, in 1865, with a wife and three children, and \$10 surplus capital. He now owns fifty acres of improved land with good buildings upon it. Most of his land is in fruit, and one year he realized from strawberries alone, \$2,000.

C. C., an Italian, went to Hammonton soon after the war closed, as a common laborer. He purchased twenty acres of woodland, upon which he paid \$10, on account. He is the owner to-day of three small plantations, lives in a commodious stone house and has what would be considered a competency.

These are not isolated cases, but types of many more, both of Americans and foreigners.

The belt of country to which we are endeavoring to attract public attention, is for the most part situated on the eastern slope of the ridge running diagonally across the State in a southerly direction, between the ocean and bay. This slope, extending to the Atlantic coast, has very justly attained wide-spread prominence over our country as a desirable winter resort, for all classes of patients needing a mild dry climate. It is well known that during the last few years large numbers from extreme northerly sections, and even from Philadelphia and New York, have resorted to Atlantic City for temporary and often permanent residence, to escape extreme cold and damp Winter months in other localities, with the most satisfactory and beneficial results.

The population of Hammonton, Egg Harbor City and other adjoining towns, are very largely made up of permanent residents from the New England States, who were originally attracted thither by the mildness and dryness of the atmosphere in these special localities. Most of these Northern patients (who are patients no longer) were afflicted with diseases, for which the

atmosphere and other local influences hereabouts had special curative efficacy, such as throat and lung difficulties, rheumatism and kidney troubles, nervous debility, &c.

The healthfulness of this region is promoted not alone by its equable temperature and dry soil, but by the remarkable remedial properties of the well, cedar and iron waters, which abound in this district.

But there is no occasion for us to enlarge upon this aspect of South Jersey, since Doctors Snowden and Ingram have treated the subject in another part of this report, with more detail and professional knowledge.

Throughout this section of South Jersey the natural advantages for surface drainage are all that could be desired. As in all new and unimproved regions of country, the streams and water courses are neglected, and the debris and fallen timber occasion periodic flooding of large districts, but they produce here no unhealthful disturbances. Where else do recurring inundations of large tracts of land leave no traces of malarial fevers?

But drainage is nevertheless a subject of vast public importance irrespective of its bearings upon health, and without any definite information of what the needs of sections of South Jersey are in these regards, we take occasion to say it is probable that the interests of agriculture will ere long demand the adoption of a comprehensive and enlightened system of drainage to relieve this entire region of occasional unnecessary overflows. If we are correctly informed, there are ample natural outlets into rivers and bays to relieve the interior of all surplus water and render the valley bottoms and meadows useful for grazing and cultivation. This thorough system of drainage too would bring into effective utility immense deposits of invaluable muck.

And this leads us to advert to the superabundant deposits of marl which, with varied fertilizing characteristics, underlie a large portion of the counties bordering on the ocean, and which extend northwardly into Monmouth county. This natural fertilizer is destined to achieve inconceivable agricultural results for the State of New Jersey. In contiguous districts it has already effected marvellous changes in the productiveness of the soil. Monmouth county has been enriched beyond measure by

the unstinted use of her own unearthened marl treasures. And it is a fact as singular as it is fortunate, that these deposits are found in the localities precisely where they are most needed.

This department has devoted considerable attention to this section of the State, under the obvious conviction that its condition and *glaring natural advantages and resources, are practically unrecognized in any due proportion to their magnitude.* Hence, the first report of the Bureau will have rendered valuable and appropriate service to the State, if it shall subsequently appear that it was instrumental in drawing public attention to these vast southern unimproved possessions, and thereby expedite their occupation and development.

We have assurances which warrant us in saying that a very general willingness exists on the part of holders of the large undivided tracts we have referred to, to encourage their distribution at reasonable prices among worthy and enterprising settlers, in large or small bodies. Prices and terms, as has been previously stated, would be made conformable to the conditions and circumstances of the applicants, so as a rule, no one entitled to confidence will fail to make terms with landowners. This would especially be the case in Atlantic county, where some of the most thrifty and successful settlements will be found.

It is not within our province to aim to advance special and local interests in any portion of the State, our object being strictly to promote, in combination, public and private interests, in the whole range of our territory, though in the present instance the peninsular section for obvious reasons, is uppermost in our regards.

The tracts about which we have definite information from the owners, are situated in Ocean, Atlantic and Gloucester counties. They are all adapted to the ordinary purposes of cultivation and vary but little in quality and price.

Ocean county has the advantage of being nearer the New York markets than either of the others. Cranberry lands abound in each, and other kinds of fruit do equally well in the respective sections. As the various districts are opened up, diversified productions will adapt themselves to the soils and climate. Railroad facilities are very fairly distributed through all these counties; and it will be observed that the State railroad system is

admirably prearranged for penetrating with lateral roads *coast-wise*, the whole of South Jersey. The rapid occupation and growth of eligible sites for Summer resorts along our coast will necessitate the extension of travelling facilities in that direction. Who can entertain sentiments adverse to the extreme desirability, and feasibility too, with such appliances and instrumentalities as may easily be inaugurated, of seeing a million acres now totally unproductive, transformed into communities achieving success in every department of industry.

Our solicitude to obtain ample and reliable facts respecting the resources of all sections of South Jersey, rendered it necessary to avail ourselves of the best sources of information through correspondence and otherwise. The following observations are so practical and from a source so long identified with the districts embraced therein, that we regard them of sufficient local importance to copy verbatim. Dr. Theophilus T. Price of Tuckerton is the author :

OBSERVATIONS ON THE "WILD LANDS" OF BURLINGTON AND OCEAN COUNTIES.

At a rough estimate, there are upwards of five hundred thousand (500,000) acres of land lying in the southern and southeastern parts of Burlington and Ocean counties, which are unoccupied and unemployed.

This large area, a compact, almost unbroken tract about thirty miles square, is bounded on the south by Little Egg Harbor river, on the west by the eastern line of the marl beds, on the north by Toms River and its tributaries, and on the east by the salt marshes and bays along the Atlantic border.

With small exceptions, it is covered by a vigorous growth of pine and oak woods in various stages of development, from bushes to saw logs.

Its value for producing timber, however, has been diminished in later years, owing, in part, to the almost universal employment of coal for fuel, and, in part, to the risks of fire from locomotives and incendiaries; but its fertility is manifest from the fact, that if the timber is allowed to grow, profitable crops may

be taken off every thirty years for cord-wood or small frame stuff.

One of the most evident causes why this section of country has not been more generally occupied and improved, is found in the fact of the easy way in which the inhabitants have obtained a livelihood.

It is almost impossible to get men to work hard on farms, in the heat and dust, when the inviting bays, with their cool breezes, and natural stores of fish and oysters are in sight.

The boys, especially, grow up with an inveterate dislike for the dull (and as they think menial) labor of the farm; and rather than toil and wait for the sure and honest rewards of the husbandman, they fly the paternal home, and seek the more adventurous but precarious pursuits of watermen and fishermen.

The land lies idle; the natural resources for substantial living are neglected; and when dull times destroy the profits of the coasting trade, or failure in the growth of oysters or a supply of fish occurs, as is often the case, want and poverty follow; while the thrifty, industrious spirit of the man has been destroyed.

The soil is, generally, a sandy loam, easily cultivated, and very susceptible to the action of stimulating manures, and capable of producing remunerative crops of all kinds, when properly cared for.

The contiguous bays, creeks and salt marshes on the one side, and the marl beds on the other, furnish valuable fertilizers, easily accessible.

On the coast, large quantities of fish (menhaden) are taken, the refuse of which, after the fish have been pressed in the oil factories, is sold under the name of "*fish guano*." This is the crushed bodies and bones of the fish, and when applied to the land at the rate of one ton per acre, will produce fine crops of any kind, grain or vegetables.

The fish themselves, applied directly to the land, makes a very stimulating manure.

Black mussels, a fragile shell fish, may also be gathered at times, by hundreds of tons, and constitute a most excellent and cheap fertilizer, at from sixty to seventy-five cents a ton.

Salt-mud from the creeks, marshes and coves of the bays, is an excellent manure when properly managed, but requires

further experiments, and a more general use, to determine and settle its comparative value with other materials. This may be obtained in quantities as enormous, and as cheap, as marl can be had in its own neighborhood.

Besides these, the sea weeds or sea drifts, bay grasses, salt marsh grasses, and other fertilizers are abundant and cheap.

If we may rely upon the statements of intelligent foreigners, and of our own countrymen who have travelled in Europe, *these lands* are capable of maintaining as prosperous and as prolific a population as the wine growing districts of the South of France.

The *natural* quality of the soil is said to be equal, at least, if not superior to the soils of that district. It is no longer a question, as to the success of grape growing on these lands.

Egg Harbor City, Hammonton, Vineland and Lacy located on the same kind of lands precisely, are well known examples of successful grape and other fruit culture.

Within the boundaries above described, are found some of the largest and most successful cranberry plantations, of this or any other State.

Vegetables of every description, and of superior quality, can be produced in great abundance. Grain and grass require liberal fertilizing, but are profitably grown. The natural grasses of the salt marshes, unailing in production, are valuable for pasture, hay and manures. The climate is modified by its proximity to the sea. Frosts do not occur so early in the fall, nor continue so late in the spring, as further inland in the same latitude. The health of this section is unequalled. If the phrase "As wholesome as the pines" has not already passed into a proverb, it ought to. The soil is porous, the drainage, by swift-flowing cedar swamp streams, is everywhere good, and there are no pond-basins, to the writer's knowledge, in the whole district, to cause malarial fevers, which are almost absolutely unknown to originate in this district.

Animals as well as men, partake of the general healthfulness of the climate. Sheep could be profitably raised could a law be passed to expel the dogs. Swine and poultry do very well. Cattle are easily raised along the coast, being pastured a greater part of the year on the salt marshes.

Sweet potatoes could be made a leading crop. Hops could be grown with profit, it is thought. Tobacco does well. Flax and other textile plants have not been tried, but there seems to be no reason why they should not be successfully cultivated.

In conclusion, the writer can see no reason why any plant which can be successfully raised in this latitude cannot be grown as profitably in this district as any other.

The multiplication of industries is becoming more and more a desideratum throughout the country, and this diversity is no less essential in agriculture than in manufactures, for the reason that providential causes operate so diversely upon agricultural products, that the greater the variety under cultivation within a given district, the more likelihood of good results in the aggregate.

The public mind throughout the country is anxiously occupied upon the subject of industrial and commercial resuscitation, and possible reconstruction in the interests of labor. It is not to be disguised that unusual depression and deep-seated discontent have penetrated all sections and all classes, and so little has been achieved in the way of practical alleviation of the alleged suffering therefrom, that the *solution is seemingly intangible and virtually impracticable by any specific and definable agency.*

We are quite sure that the conflict between the poor and the rich, which is conceded to be a primary cause of our troubles, intensified to be sure by other causes equally uncontrollable for the moment, *will not cease to embarrass our nation until a different spirit animates both employers and employees.* The belief is quite prevalent that capital shares but little of the responsibility for existing antagonisms. We have no disposition to try to equalize this responsibility, nor does the subject we are treating demand such an inquiry; *but our convictions are that concessions are due from each, and that the true relation of the rich to the poor cannot be defined and enforced except under the predominant sway of a higher Christian philanthropy and benevolence than is prevalent to-day in business circles.* "The rule now commonly acted upon is that business must be cared for and men must care for themselves. The principle of action, in the end, must be *that men must be cared for, and business must be subservient to this great work.*"*

* President Chadbourne, of Williams College.

There is less diversity of opinion as to the causes of the prevailing business trouble than there is in reference to methods to bring lasting relief. No lack of thoughtfulness is observed, and well-considered expedients are proposed, but they have failed thus far to restore harmony and general prosperity. There is a prevalent and well-grounded belief springing up, that, after all, *the labor troubles can only be adjusted upon an equitable and permanent basis, by "patient waiting" for an advanced civilization and appliances for progressive industrial education of the masses; these, coupled with an adequate infusion of the spirit of the decalogue, and more pertinently, perhaps, the "golden rule," will, with greater certainty and stability, re-establish amity and reciprocity between capital and labor.*

The cry is for steady and better rewarded employment, and the refrain is, by whom and by what means is it to be adequately and expeditiously supplied.

All professions, and most all mechanical and industrial pursuits, have, for the past five years, been incapable of fully employing those identified with them. If it were otherwise to day, there would be less occasion for cogitation and apprehension for the future. If those pursuits which have in late years afforded occupation for our working people, both skilled and unskilled, are over crowded, and likely to remain so for an indefinite period, from whatever cause, it is clearly incumbent upon all alike to exhaust remaining resources to meet such an emergency with every possible alleviation.

The most efficacious and permanent remedy for the present dearth of employment, if practicable, is the introduction of new industries; and as far as possible, it should be our purpose to extend and diversify agricultural pursuits to their utmost limit.

Later and more hopeful experience impels us to recur again in this connection, to the fibrous products which have occupied much attention during the past year. From the outset we have had the utmost confidence in the successful growth of jute and ramie in this State.

Since the publication of some articles a year ago, calling public attention to these textile products, our convictions in regard to success in producing both the jute and ramie fibre and the value

of them in comparison with the imported articles, have been strengthened by what we consider indubitable evidence that in both of these products we may anticipate the acquisition of two new industries, viz: agricultural and manufacturing, which, at this special juncture, cannot be unduly appreciated. If our expectations are realized in this, and our State becomes the pioneer in the practical development of two new American productive industries, it will surely be a subject of congratulation.

In respect to jute, success is assured so far as its growth is concerned, since the plant relied upon to produce the fibre, is growing spontaneously in nearly every township in the State, with most luxuriance in the Southern half, but we are confident that every county can participate in the advantages of its introduction.

This has been ascertained through the medium of the following circular, very generally copied in the State newspapers, and largely distributed directly among the farmers. Great credit is due the newspaper proprietors of our State and the citizens generally in the rural districts, for the interest manifested in this prospective double industry.

“ AMERICAN JUTE.

“ ABUTILON AVICENNAE.

“ *Order Malvaceæ.*

“In the last two years I have given much attention to the subject of fibrous plants, not only as an essential prerequisite to the extension of manufactures, but with the view to enlarge and diversify our State productive industries, and thereby furnish new occupation in the pursuits of agriculture and manufactures.

“All know the importance that is attached to the *Cotton* industry of this country, and this will best illustrate the value of another fibrous plant, JUTE, which, if successfully introduced as an American product, will be second only in value to cotton.

“Jute is now chiefly produced in India, and in that country to the extent of 1,000,000,000 pounds annually, and about 20,000,000 pounds are imported every year into the United States. If we can make Jute a domestic product, its uses can be vastly multiplied, and the East Indian government is already apprehensive that our country will not only produce this fiber for its own consumption, but become exporters of it. It is believed this can be done with the *India* seed, at least in the more southerly States. But we feel assured that there is a Jute-producing plant, familiar to all of us, growing spontaneously in sections of New Jersey, if not throughout its breadth, and the object of this circular is to acquaint the agriculturists of the State with its existence and possible value.

“I have experimented this summer in my garden with the seed both of the India and American plant, and the accompanying cut represents a stalk from the American

seed, which was six feet high when it was engraved, three weeks since. But the average, as it will be found in most sections, will probably be from two to four feet.

"Its spontaneous growth will, of course, indicate its adaptability to our soil and climate, hence this plan is adopted to determine this important question.

"We invite the co-operation of the public in an endeavor to develop this new industry, which will give us a new fiber for textile fabrics, and also a valuable material for paper pulp. When the plant is found it will be readily identified with the cut. I simply ask the finder to gather the seed at the proper time, and put it into an envelope with a brief note, informing me of its location. The seed is supposed to be matured when the pod begins to get black, and before the cells begin to open, otherwise much seed may be lost.

"While I desire to obtain seed from every locality, if any choose to retain a portion to experiment with, I would be glad to have them do so, and report the particulars another year. In this connection I would advise the use of horse manure as a fertilizer. Sow the seed in rows or broadcast. You will please give me the general height of the plant.

"By order of the Governor,

"SAMUEL C. BROWN.

"Trenton, August 23, 1878.

"P. S.—Please circulate, among *farmers* especially. *Editors* are invited to promote this investigation."

We had two definite objects in view in resorting to this circular: first, to ascertain whether the plant is adapted to the more northerly counties of the State; and second, to awaken an interest in the subject of its cultivation. In both particulars the result is highly satisfactory.

The circular has brought many inquiries in regard to the cultivation, treatment and use of jute, which we were unable in all cases to answer. If it were necessary, we could describe fully the Eastern process of cultivation, mode of treatment and preparation of the fibre, but as our processes will vary very materially from those followed in India, it is not necessary to take the time upon this occasion to cater only to curiosity. At some future time we will enter more into detail regarding the cultivation and curing of this product.

It must be remembered that success in this new field of enterprise is dependent upon the cost of the product. Unless we can substitute mechanical appliances to offset the cheap labor of India, we cannot hope to attain success in producing jute fiber. But we need not entertain doubts in reference to future mechanical achievements in manipulating either jute or ramie filaments. There is a machine in Philadelphia which, it is asserted, is

already regarded as a triumph for this purpose. If so, it will not be long before *American* jute and ramie will be on the market.

These industries are advocated in the interest of the public, hence every encouraging feature pertaining thereto should be disclosed. We have had two interviews with importers of jute, with samples of New Jersey jute fibre in hand. We sought these interviews with the view to determine by *unfriendly* criticism, the character of the domestic article. The gentlemen were informed of the circumstances under which our samples were prepared, with the further assurance that they were not equal to what would be produced from the same garden plants later in the season. The quality, however, was pronounced to be very good, and furthermore, that if we "never produced anything better than that, our country had something of great value;" and still further, that "America would become an exporter of jute." The other gentleman we subsequently met, who is engaged in the jute trade and a resident of Calcutta, after examining with the deepest interest our specimens of jute and ramie, had the kindness to say, "I would not be surprised if you did succeed in producing jute some day." The value of this concession was greatly enhanced by the indescribable disinterestedness with which it was announced.

We have expressed a hope that New Jersey may be the pioneer State in these new textile products. And yet it is by no means certain that we shall be indulged in this felicity, for we are informed that Ohio and Illinois abound in the *abutilon* plant, and in each its textile utility is under consideration. And we should not omit to refer to another Western State in which jute has a very enthusiastic advocate. Professor Waterhouse of the Washington University, St. Louis, has been in India twice, and he has made jute culture in this country from the *India seed*, a specialty. Last Winter he prepared a circular letter and addressed one to each of the Governors of the Middle and Southern States, the object of which was to obtain executive endorsement of an effort to naturalize the India jute-producing plant with the hope of making that staple an American product.

As it is well calculated to impart additional emphasis to our initiative work in the same behalf, we deem it proper to insert it here.

1878.]

“ WASHINGTON UNIVERSITY, }
“ ST. LOUIS, MO., March 5th, 1878. }

“ DEAR SIR—My interest in the industrial welfare of the country induces me to address you upon a subject of great economic moment.

“ Personal investigations in India have fully convinced me that jute can be naturalized in the United States. The conditions of the soil and climate in our Southern States and in California are suited to the growth of this plant. The commercial importance of jute is now immense. The culture of this staple now adds scores of millions annually to the productive wealth of India. Amid all the vast and diversified productions of that fruitful land, only cotton, opium, and rice exceed jute in mercantile value. In 1872, besides all the domestic consumption of jute, seven hundred million pounds were exported to foreign countries. The United Kingdom was annually manufacturing more than three hundred million pounds of this fibre.

“ The range of its uses is broad. It now enters into the manufacture of every kind of fabric from the coarsest gunny cloth to the finest satin. It is claimed that the culture of jute is less exhaustive to the land and more profitable to the cultivator than that of sugar cane or cotton. The plant grows with rank luxuriance. Sometimes the yield per acre is thirty-five hundred pounds.

“ The cheapness of native jute for bags and baling would facilitate the movement of our crops and the revival of our domestic commerce. The fertility of our soil, the economy of our agricultural machinery, our skilled labor and scientific supervision, and our superior chemical and mechanical processes of treatment will assuredly enable Americans successfully to compete with the rude manual industry of India in the cultivation and manufacture of this important staple.

“ Planters, chemists and inventors may profitably direct their attention to this new source of personal and public wealth. Improvements in methods of cultivation, in processes of steeping the plant and in mechanical facilities for removing the bark would open to ingenious minds untrodden paths to opulence.

* * * * *

"An industry fraught with such possibilities of national wealth deserves encouragement by *legislative bounties*.

"It is hoped your Excellency will further the success of this undertaking by official recommendations; and that the Legislature and State Board of Agriculture will actively aid an enterprise whose prosperity would so effectively promote the material interests of the nation.

"Very respectfully, yours,

"SYLVESTER WATERHOUSE."

We must not forget that Prof. Waterhouse speaks of the India plant. We have no doubt, as he says, that the India species could be acclimated in a few years, and be successfully cultivated in the Middle and Southern States.

But we have no need to lose that time, when a plant equally useful for the purpose is all about us, said to be a native of South America. We have seen in our State stalks four feet high growing from India seed, which proves its practicability in this latitude.

The importance of the subject justifies seeming prolixity in enforcing it upon the minds of our citizens. The times and the condition of the people sanction importunity and earnestness in recourse to expedients designed to afford new and extended employment to both skilled and unskilled labor. We all know how difficult it is to interest the general public in *untried schemes*. The disinclination to participate even in industrial reforms, in advance of their practical demonstration, is too prevalent. One cannot place a very high value upon co-operation in new schemes *after* their merits have been rendered so obvious that no one can fail to recognize them at a glance. This department can be vastly serviceable in initiatory advancement of important public interests, but in the legitimate exercise of its functions it needs to be seconded and supported by the body politic. In the improvement and enlargement of industries, without aid and co-operation, we cannot be expected to achieve much success.

With the view still further to strengthen and corroborate our utterances in respect to extending State industries, we requested a Swiss gentleman of our acquaintance who has made textiles a study for many years, to communicate the result of his experiments and observations in respect to the cultivation

of these two fibrous plants. It will be noticed by his letter, which we deem worthy of a place in this connection, that he is in full sympathy with our efforts to inaugurate the production of jute and ramie in New Jersey soil.

“PHILADELPHIA, SEPT., 1878.

“*Samuel C. Brown, Esq.:*

“DEAR SIR:—I read with interest the report of the Commission on the ‘Encouragement of Ornamental and Textile Fabrics,’ of which you are President. It is a clear, elaborate and forcible plea in favor of the industrial elements of which New Jersey is so naturally rich. As an advisory argument based on impressive generalities, and as a record of efficient examples to follow, it is a valuable report. But as it is merely argumentative, it needs practical demonstration and tangible facts, showing the existence, the extent and the possible developments of the resources, indicated in general terms.

“To attain this completeness in the textile sphere, you have requested me to report the results of my experimental studies made recently on new fibrous plants, specially on ramie and American jute, to which I have devoted special attention. I comply with your request with pleasure by the following statement of facts relating to these two valuable plants.

“Since the publication of my treatise on this subject by the United States Department of Agriculture, and also since I called your attention to the variety of jute growing spontaneously in New Jersey and Pennsylvania. I have closely observed the characteristics of the plants and practically treated them up to a transformation into a commercial product, on a limited but mechanical scale.

“The results of these attentive experiments convinced me beyond the least doubt of the possible development of these fibrous productions, towards large avenues of trade and wealth for New Jersey. I will begin with the ramie, the richest and the most curious of the two.

“*Ramie*, a vegetable silk, is chief member of the *urticea* tribe and is of remarkable value wherever it grows, as you have already noticed in your ‘Centennial Suggestions,’ and as has

been demonstrated at the Philadelphia Exposition, where China and India had it in various forms.

“A few years ago ramie was introduced, and successfully cultivated for a time, in Louisiana; also India jute. But destructive overflows and finally the discovery of the fact that water was too near the surface of the soil for such deep-rooting perennial plants, caused the suspension of the enterprise in that section, which, moreover, has become from social and political turbulence, very unpropitious for any new industry.

“So far, it was generally believed that ramie was a semi-tropical product. The exhibition of a fine ramie growth in the open ground at the Centennial by the U. S. Department of Agriculture, then under Judge Watts, revealed the important fact of the possibility of raising it in this section, as it is raised in some colder regions of Northern China, where they dig up the roots, keep them in cellars and replant in the spring like potatoes.

“It being recognized that ramie was not absolutely a southern plant, Mr. Saunders, the learned chief agriculturalist of the department, suggested that the New Jersey soil and climate would suit the plant and advised me to prosecute experiments in that connection.

“Commissioner Watts gave me the Centennial patch to transplant, and with some roots saved from inundation in Louisiana, I started operations in Camden in 1877. I was surprised that the growth turned out superior to any grown in the South, and standing the Winter without the least damage, sprouted abundantly in the following Spring as if it were in its congenial sphere.

“This prolific and vigorous growth increased in luxuriance and number of stems all the Summer, specially after each cutting. That unexpected result led to the observation that there was an intimate relation between the constituents of the soil and of the atmosphere, thus forming the cellulose of the plant. A large quantum of minerals, phosphate, and silicious elements in the soil, and oxygen and carbonic acid in the air, account for the superiority of New Jersey over other sections regarding that plant, which unlike cotton, has all its value in the bark, like flax and hemp. Ramie derives its principal food from the air. That explains the possibility of its triple annual cuttings, and extraordinary abundance without exhausting the soil, more than

any other plant. Three crops of four and five feet each are certain from April to October, after the first season has formed the stand.

“Being protected against deep frost by a thick coating of leaves, hay or straw mixed with some stable manure, the stand will last indefinitely and constitute a permanent income. The leaves of the plant itself will do very well for that covering and manuring; when dried, leaves are non-conductors of cold, and they generate—specially ramie leaves, a certain amount of ammonia, which is a good fertilizer. The experiments referred to were made in ordinary sandy soil, such as is found all over West Jersey. Repeated at Haddonfield in a soil similar to that of Camden and not richer, the same satisfactory results were obtained. Some planted in the Fairmount Park, Philadelphia, did not attain the same degree of development, though better manured and cultivated than in New Jersey. However it thrived well enough in the Pennsylvania soil to prove that the problem of raising ramie successfully in this section is conclusively solved in the affirmative, specially in New Jersey, where it grows best and offers all security against inclemency of Winter. The porous and silicious nature of the soil, and the softening influence of the gulf stream, the large bays and rivers which cut the current of intense cold, respond to the average requirements of the plant, which wants dry and light ground.

“It is well known that the ramie staple is classed next to silk for strength, lustre and fineness. It mixes advantageously with certain silk and wool fabrics, takes any color readily and is an excellent material for sewing and shoe thread. It is the best base ever used for celluloid products. In fact, a variety of applications are open for this fine textile, and its only fault so far lies in its great scarcity. It has not yet been regularly cultivated in this country outside of Louisiana, where it was accidentally checked.

“China and India have had for centuries the monopoly of that silky product. The British possessions of the Eastern continent have added to it the monopoly of the jute trade. The treatment of these plants in those countries is wholly by hand. But here, where the price of labor is ten times higher than there, we have a mechanical system of extraction, accomplishing cheaply the disintegration of the fibre. There will soon be some ramie

fabrics of American weaving, as preparations are being made in Philadelphia to weave American ramie staple. The importance attached by England and India to the ramie development can be appreciated from the fact that, a premium of £5,000 is offered for the best contrivance for decorticating and separating the filament from the ramie plant, which cannot be subjected to the ordinary rotting process. As the American process above referred to is intended to compete for that premium, a description of it cannot be made public.

“The yield of staple from the ramie plant is very encouraging. The three crops of stalks, averaging four and a half feet in height, when the stand of the growth is fully established, gives about eight tons of dried stems, which contain $12\frac{1}{2}$ per cent. in clean fibre, or one-eighth of the bulk, making one ton per acre.

“As no farmer will be in position of growing and manipulating the fibre in some time, it will be advisable, if not necessary, to divide the industry into producing and manufacturing; as in the French colonies, and in some parts of Louisiana, the sugarcane central factories buy the raw crop in bulk, or by the ton, and transform it into a commercial product.

“Ramie, in good condition might be worth \$10 per ton, put up in bundles of dried stalks, well assorted in length. The starting of such an important industry should be by some combined powers, more efficient than individual efforts. The seed-plant, the technical knowledge of producing, and the required apparatus for manipulation, are not obtainable to many, and there is no possible success in working ramie in a small way. That explains the failure of so many attempts at introducing new products. It is a want of organized force and capital that makes fruitless the distribution of new seeds by the Department of Agriculture. A technical school and a model farm, with the offer of bounties to producers, would do more in one year than all the millions spent in details for the last twenty years.

“I conclude these remarks on ramie by an assurance based on facts: fifty acres of ramie, with an outfit to manipulate it, would, in my view, be a source of wealth.

“AMERICAN JUTE.

“This is an excellent fibrous plant, cheaper than ramie to

establish on a farm. It is the Indian mallow, brought accidentally in grain from the Eastern continent, where it is indigenous as the Calcutta jute.

“As it prospers best in manured spots, it cannot be called properly a wild plant. But until its utilization shall be established, it will be a noxious weed which farmers consider and treat as a pest. This was also the case with many valuable plants, such as coffee, tea, sugar cane and various berries in universal use. That yet ignored plant, as an industrial product, belongs to the useful order of *malvacea*, of which cotton, okra, althea and marsh mallow are members. Indian jute is also a *malvacea*, though often classed as a *tilliacea*.

“The similarity of the two plants is so close, as far as the filament is concerned, that the denomination of American jute seems very appropriate to this native American fibre. Comparatively it is superior to the imported Indian jute; its fibre is stronger, whiter, less astringent with tannic acid, and consequently not so refractory to bleaching as the Indian product. Its history as a commercial product will be similar to that of the East-India jute or “jhot,” as the Indians call it. That was also ignored and treated as a common weed until observed and studied by some British scientists of the India Company.

“As soon as its utilization was ascertained, its production was so encouraged by the government that in a short period its development resulted in millions of bales yearly, and to a monopoly for England almost equal to that of cotton for America.

“We have more inducements to embark in the production of jute than the East-Indian had. The superiority of our staple, the mechanical facility for treatment, and the ready home market, now supplied with the foreign article, open the road for successful enterprise in the development of this new industry.

“Practical experiments have resulted in the following facts: The yield in stalks per acre is about five tons. The quantum of fibre is about twenty per cent. of the crude material. The value of the long fibre is fully equivalent to that of the Calcutta prime jute. Extensive jute rope manufacturers of Philadelphia, have offered to buy any quantity at the highest jute-market price. They admit the superiority of the American variety over the imported, but the class of rope made from it

would not command a superior price until the difference should be appreciated by customers.

“Having been bleached and cottonized for fabrics, the American jute is pronounced good for weaving tissues, and for mixing with a certain class of woolen goods. In fact it looks more like wool than like a vegetable fibre.

“The cultivation of this plant is established, as it grows spontaneously in corn and potato fields, and its seed has such a tenacious life that it resists the hardest frost. Every year the promiscuously sown seed extends the growth of the plant to the great inconvenience of farmers. But it evidently has an irrepressible mission to fulfill; the plant will survive any ill-treatment. The size of the stems in its best wild development averages from six to seven feet, and one-half inch in diameter.

“In India, jute is rotted in water and separated by hand from the lignous body. This method cannot succeed in America. As with ramie, machinery and chemicals must be substituted for the production of American jute. As explained in the case of the ramie, the jute industry can be most successfully established by organized agencies through which farmers could sell their raw crops by the ton. At ten dollars per ton for dried stalks in proper shape, the grower and the manufacturer could realize respectively, legitimate profits from the new industry. Surely, having given the facts regarding the cultivation, and of cheap manipulation, American energy and intelligence will soon take hold of these two new products, and accomplish wonderful industrial feats.

“I close this statement with the following report of the special committee on the two products of ramie and jute, exhibited at the New Jersey State Fair this month. The exhibits were part of the results obtained from the mechanical treatment of fibre above referred to, and about which I will give further information when wanted.

“Respectfully yours,

“E. LEFRANC,
“112 S. 17th St., Philadelphia.”

“NEW JERSEY STATE FAIR.

“SPECIAL REPORT ON RAMIE AND AMERICAN JUTE.

“WAVERLY, N. J., Sept. 20, 1878.

“The special committee to whom was referred the staple articles of ramie and American jute, on exhibition at the Annual State Fair of September, 1878, do respectfully report that they have carefully examined the above plants and fibres, with the aid of experts, and are satisfied that they are of the greatest importance to the industrial interests of New Jersey, and particularly to the farming and manufacturing masses, who can raise these fibres with great advantage in a soil and climate that possesses all the elements of enormous yield, great profit and permanency of culture.

“Of their value, there is no longer any doubt, sufficient quantities having been raised and manipulated in this State. Their uses are well defined among growers and manufacturers. At Camden and Haddonfield, N. J., ramie has been grown at the rate of three crops in a single season from one seed of planting, the height of five feet being the average, and the product yielding about eight tons of dried stalks per acre (in the three crops), valued at about \$10.00 per ton. It is a perennial plant, and when once planted, requires the ordinary culture of corn.

“The market value of fibre in England is worth about twenty-five cents per pound, in the raw state, but when bleached and dressed it realizes about one dollar per pound, according to perfection of quality.

“The remarkable fineness of this material combined with extraordinary strength makes it a formidable competitor against flax, hemp, cotton, etc.

“It can be mixed with silk, and the only article claiming a superiority over it for fineness, texture and strength, is silk. In the manufacture of dress goods, threads and other articles requiring the peculiar characteristics of silk this ramie product will be found of incalculable value. In the manufacture of celluloid it stands at the head, and must reform the whole class of celluloid manufactures as a base.

“In India and China it is an article of staple product and has long received the most favored consideration by the people and government of the former. By repeated experiments of Dr.

Roxbrough, the great botanist in East India, and Dr. Royle, it was proved of more than double the strength of Russian hemp. Its freedom from atmospheric and chemical changes, and application of high steam, add to its value. As a material for bank paper, it has no equal or superior.

"The statements and facts herein enumerated are sustained by the official reports of the United States Government—Agricultural report, 1873, and also that of the Indian Government on rhea or ramie, by a Royal Commission.

"AMERICAN JUTE.

"That plant has long been considered a great nuisance to the cultivator of the soil. It grows in all parts of New Jersey in a wild state, and annually gives its yield, which goes to waste. It is now proposed to utilize it and make it take its proper rank among the great industries of the State. It contains a long fibre superior to the Calcutta jute, so largely imported for manufacturing. Being cottonized as exhibited, it can be mixed with wool and other fabrics. The disintegration is made by the process applied to ramie, through machinery and chemistry. The farmer now knows it only as a common weed, and when turned to practical use will find it of cheap and easy culture. It is said to yield at least five tons per acre; is gathered as one crop, and is worth from \$8.00 to \$10.00 per ton in its crude state. When dressed it takes the place of jute, and when bleached and cottonized for fabrics will take the place of cotton, and will claim the prices of the same.

"For more full particulars and detailed statistics, see Lefranc's treatise on ramie and jute in the Department of the United States Agricultural report for 1873, and S. C. Brown's Centennial suggestions with same in 1877. The committee recommend the highest honors of the Society—a gold decoration of merit as an award.*

"Respectfully submitted,

"J. L. DOUGLASS,

"DANIEL F. TOMPKINS,

"*Special Committee.*"

*The exhibitors of the above ramie and jute are J. B. Falser, Belleville, New Jersey, E. Lefranc, Philadelphia, Pa.

We intended to have devoted a page or two to the ramie culture and fibre, but Mr. Lefranc has perhaps said all that need to be said at present upon that subject. Of the high value of the ramie fibre there is no question. Like jute, if we can make it a domestic product, its uses can be indefinitely multiplied, alone, or in combination with wool, cotton and silk. Its cheapness will of course control its uses. This fibre occupies an intermediate standing between other vegetable fibres, hemp and flax, and the usually higher priced animal fibres, wool and silk. We believe our versatility of resources will avail us both in the cultivation and treatment of the stems, to such a degree, as to enable us to produce the fibre in successful competition for many purposes with its chief rivals, wool and silk.

In the East this fibre is used extensively for nets, fishing lines, and other purposes for which strength, lightness and water resistance are essential. Dr. Royle, as the result of experiments, estimates ramie to possess double the strength of Russian hemp. As evidence of the wide range of its applications, we will close what we have to say about ramie or rhea, with the following quotation from a report by an Englishman, Dr. J. Forbes Watson, "on the preparation and uses of rhea fibre," made in 1875: "It appears that there hardly exists a fibre which, in virtue of its own inherent properties, can be applied to so many different uses. Amongst the fibres which already enter largely into textile manufactures, flax is perhaps the one which possesses the most extended range of applications—from the roughest canvas and cordage to the finest lace; yet the range of rhea is even greater still. This is due partly to the superlative degree in which it possesses certain qualities, such as fineness, strength and lustre, not usually associated in the same perfection in any single fibre, and partly to the curious intermediate position which it holds between the usual vegetable and the animal fibres. * * * Thus rhea, combines the whole range of applications of hemp, to which it is superior in almost every respect, with almost the whole range of the uses of flax, excepting perhaps its use for body linen, together with certain other uses for which only the animal fibres, wool and silk, have hitherto been employed."

The time has been too short, and the means placed in our

hands for canvassing operations too limited, for us to make any formal presentation in this report of our State's manufacturing and productive industries. We could reproduce details relating to these subjects, from the United States census returns of 1870, but it was not thought admissible to do so. If the State census of 1875 had been a success, a comprehensive compendium of it would have constituted a very appropriate and necessary feature of the first report of this Bureau, to confront subsequent exhibitions designed to illustrate future achievements in all departments of industry.

Upon this occasion we have made agricultural development the primary topic, and it is entitled to first consideration in all productive regards. The two new productive industries which we have elaborately coupled with the future prosperity of our State, have relations of no less value to manufactures than to agriculture. It is the two-fold significance which magnifies both jute and ramie and commends them to special public regard. It will be our purpose in the future to co-operate in every proper way to promote progress in these and in all other tried and untried industries, which merit public recognition and patronage.

Natural advantages—or the forces of nature—will lie dormant and valueless until capital and labor become auxiliary agencies to develop what must otherwise remain intangible to supply human wants. In this category we can very properly place what farmers denominate a “vile, detestable weed.”

This jute-producing plant will continue to vex agriculturists for another generation, if capital and labor cannot harmonize and conjointly utilize its newly discovered possibilities.

Recognizing the necessity of obtaining information on which to base our judgment, the Bureau employed Mr. Charles H. Simmerman to collect facts as to the employment and price of labor, the cost of living, &c., in the First Congressional District.

The following report was forwarded by Mr. Simmerman and is published herewith for the sake of the facts which it contains; and, although some of the deductions drawn are at variance with statements already put forth in this volume, yet, they have been published with the rest as the opinions of an

individual of prominence among a class of which he claims leadership.

As the preceding article has special relations to interests identified with the southern portion of the State, the following report will form an appropriate supplement to it:

Hon. James Bishop, Chief of Bureau of Statistics of Labor and Industries:

In performance of the work assigned me to canvass the counties of Camden, Gloucester, Cumberland, Salem and Cape May, to ascertain the condition of the labor class, and report such statistical information relating thereto as may be accessible, I have endeavored to utilize my time to the best advantage, and beg to submit my report—

The want of interest by many who are capable of giving information, as well as the fears entertained by others, that should they furnish information concerning their treatment by employers for publication, they would be discharged, renders the work of compiling a complete statement of the true condition of the labor class a difficult task. These difficulties, however, can be overcome by the bureau by creating an interest in its objects in the public mind, and by inspiring a healthy public sentiment in regard to labor and laboring men.

When public sentiment becomes aroused to the fact that large numbers of our workmen are compelled to suffer impositions without daring to complain for fear of making their condition worse, we shall experience less difficulty in obtaining correct information. For no individual employer or corporation would dare to proscribe a man for telling the truth if the general public was interested in the facts. Neither would a man be left unprotected when discharged from employment because he had the courage to do right and insist on his rights as a man and American citizen.

The truth of the old proverb, "That one half of the people of the world know nothing of how the other half live," would soon become apparent to any one who should take the trouble to inquire into the inner workings of our industrial system. Many a man and woman is compelled to make sacrifices and suffer im-

position and outrage in order to maintain employment and provide for their families that would insure them immortality as heroes if earned in any other way.

Let us hope the day is not distant when these things will not be, but that we shall have industry organized upon a system more in harmony with the genius of our institutions and spirit of our civilization.

When men shall be allowed to earn their living by labor without becoming the slaves of corporations or capitalists and the products of labor shall be equitably distributed, a condition of society will arise under which men will be judged by their usefulness, and not by their success in gaining wealth. Then it will be more honorable to be useful than rich.

The district embraced in the five counties affords within its limits opportunities for development surpassed by no other portion of the State, being situated between and within easy access to the principal markets of the country both by railroad and water communication.

With a soil and climate congenial to the growth of almost every known article of food grown in temperate climates, with a population eminently noted for industry, temperance and frugality, no section or country in the world offers greater inducements for men of energy to acquire a home than Southern New Jersey.

Inquiry fails to discover any natural impediments to the settlement of a large proportion of the undeveloped land and other resources now lying waste. Yet notwithstanding these advantages the district has not been exempt from the general depression common to all sections of the country. With the exception of one or two interests, our laboring population have suffered for want of employment and in reductions of wages beyond any previous experience in the history of the country, and the cases are by no means rare where men, women and children in our towns and cities have been in actual want of food without either means or labor to obtain it.

The following shows the divisions of occupations of men in the city of Camden :

Engineers	199
Machinists	254
Blacksmiths	135
Ship Carpenters, Caulkers and Ship Joiners.....	132
House carpenters.....	457
Bricklayers	112
Stone masons.....	27
Plasterers	59
Painters	224
Laborers	1,641
Shoemakers.....	327
Tailors	74
Glassblowers	38
Segarmakers.....	132
Railroad employees.....	189
Hatters.....	38
Seamen, Boatmen, Fishermen and Oystermen.....	423
Other skilled trades not classified.....	1,730
Unclassified Laborers, Watchmen, Messengers, Expressmen and Drivers.....	252
Manufacturers	149
Builders, Contractors, Superintendents and Foremen.....	177
Clerks, Bookkeepers and Salesmen.....	911
Merchants and Dealers.....	1,072
Hotel, Saloon Keepers and Bartenders.....	160
Officeholders	65
Lawyers	43
Law and Medical Students.....	34
Conveyancing and Civil Engineering.....	19
Professors, Teachers and Editors.....	54
Druggists	72
Doctors	62
Ministers.....	25
Professed Gentlemen.....	173

9,459

Of these, I classify six thousand four hundred and forty-three as mechanics and laborers, and three thousand and sixteen who live by exchange, or from the production of the six thousand four hundred and forty-three, who act as intermediates between diversified interests, and whose gains are legitimate only so far as their functions are necessary in transferring the productions of one to the other.

That this is a large disproportion we think must be apparent, and we believe, accounts for much of the difference in prices received by producers and the prices exacted of consumers.

They constitute and form the great network of go-betweens that complicate our system of exchange, consisting of commission-men, dealers, wholesale and retail, merchants, hucksters, &c. No less than four classes or orders, each of which exact a profit

between producers and consumers, for most articles of use pass through the hands of each successively.

I estimate the toll or profits in articles of food to amount to 30 per cent., and in other articles of necessity to from 50 to 100 per cent. more than is necessary. This large percentage or price exacted between producer and consumer pays the enormous per cent. for credit, in fact, this complication makes the credit system, and the credit system upholds the middlemen. One exists because of the other, and has become the most exacting tyrant and parasite to labor.

The canvass discloses the startling fact that 2,057 of the skilled and unskilled laborers in the city of Camden were without any employment during the month of July, and nine hundred others employed no more than one-half time. I had no means of ascertaining the number in the other class not engaged in their regular pursuits, but presume it is fair to estimate the same proportion as idle, or partially so, as in the other class, which would leave three thousand and twenty-two of our people, or nearly one-third without any means of gaining a livelihood, and one thousand three hundred and twenty-three not more than half employed.

The following table gives the rate of wages in the various trades in Camden, showing the highest and lowest day wages received during 1873 compared to wages in same branches in 1878:

	Highest in 1873.	Lowest in 1873.	Average in 1873.	Highest in 1878.	Lowest in 1878.	Average in 1878.
Locomotive engineers.....	\$4 50	\$2 50	\$3 25	\$4 00	\$2 00	\$3 00
Stationary engineers.....	3 00	2 25	2 50	2 50	1 75	2 00
Ship carpenters.....	4 00	3 00	3 50	2 75	1 50	2 00
Ship joiners.....	4 00	3 00	3 50	2 75	1 50	2 00
Ship caulkers.....	3 75	2 75	3 25	2 50	1 25	1 75
House carpenters.....	3 00	2 50	2 75	2 00	1 25	1 50
Bricklayers	4 00	3 00	3 25	2 00	1 25	1 50
Stone masons.....	3 00	2 50	2 75	1 75	1 25	1 37
Laborers	2 00	1 50	1 75	1 50	90	1 00
Tailors	4 00	2 50	3 25	2 50	1 50	2 00

	Highest in 1873.	Lowest in 1873.	Average in 1873.	Highest in 1878.	Lowest in 1878.	Average in 1878.
Painters, house.....	\$3 25	\$2 75	\$3 00	\$2 00	\$1 25	\$1 75
Segarmakers	4 00	3 00	3 50	3 00	1 75	2 00
Watchmen, ordinary.....	2 50	2 00	2 08	1 75	1 25	1 50
Expressmen	2 25	1 75	2 00	1 75	1 12	1 37
*Silk hatters.....	8 00	4 00	6 00	5 00	4 00	4 50
Moulders, pipe.....	3 50	3 00	2 25	1 75	1 50	1 62
Moulders, machinery.....	3 50	3 00	3 25	2 25	1 50	1 75
Oilcloth printers.....	3 50	2 00	2 50	2 50	1 50	1 75
Blacksmiths.....	3 50	2 00	3 00	2 25	1 50	2 00
Section hands, Pa. R. R.....			1 50			90
Coal heavers, Pa. R. R., per hour.....			20			13
Handling freight, Pa. R. R., per day ...			1 65			1 10
Men with shifting engines, Pa. R. R., per month			50 00			37 00
Car cleaners, Pa. R. R.....						37 00
Brakemen, Pa. R. R.....			45 00			37 00
Brakemen on trains by trip.....			65 00			45 & 50
Engineers.....						80 & 85
Shoemakers on bench.....	4 00	2 50	3 00	2 00	1 25	1 75
Lasters, polish shoes, 60 pair.....			3 80			2 70
Lasters, button boots, 60 pair.....			4 20			3 30
Marlay sewing machine, 60 pair....			90			36
Beating out machine, 60 pair.....			90			30
Trimming, 60 pair.....			2 00			90
Finishing black shank work, 60 pair...			4 25			1 80
Finishing plain work, 60 pair.....			3 00			1 00
Edge setting, by hand, 60 pair.....			3 00			
Edge setting, by machine, 60 pair.....						90
Heeling, by machine, 60 pair.....			90			60
For working die press and dieing out five cases per day, per week.....	15 00					
For working die press and dieing out ten cases per day, per week.....						10 00
Clerk in stores, first class, per day.....						2 50
Clerk in store, medium.....						1 25
Clerk in store, youth.....						50
Female sewing—						
Vest makers—Best customer vest, 30 to 35 cents each.....						
Ordinary vest, 15 and 20 cents each...						
Shirts, 65 cents per dozen.....						33
Gentlemen's linen dusters, \$1 per doz..						30
Milliners.....						75 & \$1
Dressmaking.....				1 25		1 00

Females in factory, per week, \$3.00 to \$6.00.

Female housekeepers, with board, per week, \$2.50 to \$3.00.

Female house work, with board, per week, \$1.50 to \$2.00.

*Average time not more than five months' work in year.

It will be seen that the reduction in wages has been from twenty-five to more than one hundred per cent., and I estimate the reduction in cost of living to be fifteen per cent. in articles of food; twenty-five per cent. in articles of dress, and thirty per cent. in rents, which amounts to twenty per cent. in the cost of living, showing the reductions in the average of wages has been greater than the lessening of the cost of living. Supposing a man to earn and spend in living \$50 per month, in a family consisting of himself, wife and three children. His expenditures are in about the following proportion: rent, \$15; food, \$28; dress and fuel, \$7 per month.

This difference and loss to the labor class largely accounts for the arrearages in rents and other indebtedness incurred during that period. But the large number of the labor class who have been in enforced idleness for the past four years is of more serious concern to the State, in fact, I regard this problem as to how we shall secure these idle hands employment and prevent a recurrence of the experience of the past five years, as a question of paramount importance. That men willing and able to earn their own living should want for food in a country offering unlimited opportunities, and groaning under the weight of its abundance, is a commentary upon our civilization not at all flattering to those who have been entrusted with public affairs.

To ascribe the distress and suffering of the past four years to any natural law of supply and demand, or to say that while a few men are made rich the mass of mankind must of necessity live in a condition of poverty, is, in my judgment, to impeach the goodness and wisdom of a Divine Providence.

We must, therefore, look to other than natural or unavoidable causes for this abnormal state of society. The solution of this question involves the whole labor problem, and it would be impossible for me to elaborately discuss in this communication either the causes or remedies, but must content myself with a statement of what I deem a few of the most potent of the former, with such suggestions for improvement as are applicable at once.

I am aware that the present condition of the country is not without precedent, and that the causes and evils we deplore are not peculiar to anything in our government or system of indus-

trial organization. The history of the social condition of the world is but a repetition of conflicts between the few with unnatural power, maintained under the guise of vested rights and the mass of mankind for existence.

The primary causes are as old as societary organizations, only differing in effects, according to circumstances or conditions under which they have operated. While the tendency of all civilizations, and the best aspirations of mankind have been to improvement, gradual, but seldom interrupted in its course, each successive step is marked by the progress of liberal ideas, and measures to secure a better and more universal distribution of the wealth of the age. And the men and measures that have done most to accomplish this result are those most zealously guarded and whose memories are most venerated by mankind. The object of all governments is tacitly understood to be the securing of individual happiness, with collective or general prosperity, and any system of government that does not admit the exercise of every acknowledged right of each individual under its control is a failure.

That the material prosperity of a people depends upon their political and social institutions, is apparent when we compare the condition of civilized races with that of uncivilized, of those who live under liberal governments and those who live under despotic and class rule. The earth yields an abundance everywhere, but its enjoyment depends upon our knowledge and means to appropriate it to our own use. No one will attempt to say that there is not sufficient for all in this country, that the land has not responded to the hand of the farmer and given us food, or that we cannot supply ourselves with clothing and build houses to live in. Yet the farmer with more food than he needs is compelled to want for clothes, while the tailor with more clothes than he can use is compelled to want for food, when, if one could exchange with the other both would be benefited and the requirements of both would be supplied. Experiencing this difficulty of exchange, and not understanding its cause we have ignorantly attributed the phenomena to overproduction, closed our workshops and forced the mass of consumers into idleness, thus intensifying the disaster by making it impossible for them to obtain what they need. The result is de-

preciation in value, and panic ensues. To attribute the want of a market to overproduction while millions of our people are in want of the necessary food and clothing to make them comfortable is simply nonsense; and while millions of acres of fertile lands lie uncultivated it is equally absurd to say that we have an excess of laborers.

New Jersey has within its limits ample resources for more than double its present population, if the opportunity was afforded the people to utilize them.

But so long as the few are able to control the money, land and other sources of wealth, for purposes of speculation and gain, without any regard to the necessity or good of the whole, no system that can be devised will prevent the recurrence of these periodical panics and disturbances so disastrous to all engaged in productive industry and dependent upon their own labor for bread.

A system of laws and of industry that has given to 3 per cent. of the population the control of more than one-half of the whole wealth of the country, must inevitably produce poverty and idleness, misery and crime. The tax duplicate of Camden city for 1877 contains the names of eleven thousand six hundred and twelve persons liable to pay taxes.

Real estate valuation of city is.....	\$10,185,160
1,007 persons are assessed for.....	7,608,087
341 persons are assessed for.....	4,864,212

Eight and two-thirds per cent. of the taxable population are assessed with 75 per cent. of real estate, and 3 per cent. of the same class of population are assessed with 47.76 per cent. of the whole.

When we consider that these three hundred and forty-one persons are the most wealthy citizens and hold a large share of mortgages against the property of others, could we get their actual wealth no doubt it would be equal to two-thirds of the whole, and we believe the same proportion of population throughout the country controls an equally large per centage of the aggregate wealth, and has the power to exact a still larger share of the future increase. That this result has occurred in any one section at the end of the first century of the existence of our government,

even if exceptional, would in my judgment be sufficient to demonstrate that our industrial system has not kept pace in its development, with our educational and political, neither has the idea expressed in the preamble to the constitution of our country been realized which reads, "to secure domestic tranquility and promote the *general welfare*."

The evidence of this is seen in the extremes of wealth and poverty already existing, gradually dividing our people into classes of rich and poor, favored and dependent. It is seen in the periodical panics and disturbances in every department of social life; in the conflicts between capital and labor; in the strikes and lockouts that have but recently occurred in almost every section of the country; in the enforced idleness of thousands of persons on account of the want of money and capital which their labor has created; and in the increase of crime and suicide among our laboring people.

An investigation is called for to ascertain the causes of this state of things, and when discovered both philanthropy and patriotism should demand that thorough and permanent remedies should be applied for their eradication. I am not among those who look for the sudden coming of the millenium, but believe reform must come by the gradual enlightenment and understanding by the masses of these phenomenal exhibits in social life.

The problem we are to solve can only be reached by an investigation of the law of distribution. No one will pretend to say there is not an abundance of all kinds of material wealth for the subsistence of all in comfort.

It is equally remarkable that stagnation in business never occurs except when a large proportion of the people are in want. There is never an excess of goods in the market except when a large proportion of the people become too poor to purchase and use their own productions.

Could every man, woman and child, be supplied with all they need to make each comfortable, there would be no surplus now, but labor would be in demand to create more.

Hard times are the result of the impoverishment of a large proportion of the people and shows the existence of some unjust law governing the distribution of the results of labor.

The report of the Comptroller for 1877 gives the assessors' valuation of real and personal property taxable in New Jersey, from 1866 to 1877, inclusive, showing the average increase and decrease in each county. The average increase for the twelve years has been 26.26 per cent., while the average for the five counties has been but $15\frac{3}{4}$ per cent. Estimating the assessors to value at 66 per cent. the aggregate increase would be 42 per cent. in that period and $3\frac{1}{2}$ per cent. per annum, while the average increase in wealth of the five counties would be but 25 or but a fraction above 2 per cent. per annum.

The increase of wealth in a country is the measure of its labor to produce alone what it consumes.

With the ability to pay but 2 per cent. is it any wonder that the laboring classes are impoverished if they are forced to pay 7 and 9 per cent. for capital. I admit that the increased productiveness of labor has given a greater amount of comforts to the masses, and that the condition of all is far better than it was one hundred years ago, yet it has not given to the laborer or producer any larger share of the accumulated wealth. But I maintain that the same relative differences in wealth that existed between the few and the many under older and less liberal systems have been, through some as yet undefined law of distribution, supported and continued to the greater advantage of the few. Could we obtain the exact amount of credit and the price that labor is compelled in other ways under our industrial system to pay for the use of money or capital, we should be able to fix definitely the time when panic must ensue, because panics only occur when a large share of the people can no longer meet their obligations. So long as the people are able to pay their debts, confidence is maintained and each accepts the good name of the other as equivalent to actual payment. But these data I do not possess.

Our belief in the respective rights of labor and capital is gradually undergoing a change, and as the science of labor becomes more fully developed the change will become more radical and permanent.

Education and the force of our political institutions are beginning to inspire the masses with higher ambitions and desires to enjoy the fruits of their toil. Our civilization demands that

industry shall be fixed to a greater degree upon a labor and not solely a commercial basis.

Labor being the primary cause of all wealth, should to a greater extent be the master of its own creations, and control it in a larger degree to its own use.

Capital is undoubtedly essential to labor and the most potent instrument in its hands to provide for our wants, and should not be liable to decrease in amount or fluctuate in cost to labor for its use. Money or capital invested in any public or private enterprise should be insured against loss and draw a fixed per cent. increase for its use, to be determined by laws fixing the rate of usury on money. All gains above an equitable share for capital should belong to labor. Because a man has capital it does not necessarily give him the right to speculate in the products of labor.

Interest on money is the distributive power between labor and capital. Therefore it should always be fixed at a less rate than the average increase of wealth in a nation.

This is the governing power, and the high rates paid for money is the chief cause of the centralization of wealth into few hands, and the fluctuations in the rate for money are the cause of the fluctuations in value of commodities and most prolific cause of panics.

The Bureau of Statistics of Labor and Industries was instituted as a means by which reform in all the departments of social life may be brought to the understanding of the people.

It is a concession to the aggressive labor sentiment of the age for free discussion and investigation of those laws of societary action, upon which the good of mankind depends. The demand for specific and accurate information in relation to all the affairs of industrial life grows with our development and needs.

It cannot have escaped the enlightened understanding of any one that the development of the arts and sciences in the creation of labor saving machinery, has materially lessened the necessity of mankind to exert itself to secure the same degree of comforts that they formerly enjoyed, and that the ever diversifying pursuits of life is adding to our store of wealth and means of social enjoyment.

The increase of our capacity to produce, by improved labor

saving machinery and other forces, within the past generation, is beyond the possibility of computation. Genius has seized so many stupendous natural forces and trained them to our uses recently and so rapidly that we may reasonably anticipate still greater triumphs and vaster increase in means of production.

The work of the statistician is to point out the results of these changes, and indicate the means by which the constantly augmenting forces may be kept in harmonious relations and secure the best results to all.

That our power to supply the demands of our natures in everything but food is susceptible of any degree of expansion by artificial means, I believe is clearly indicated by the experience of the past decade. The tendency of population to seek the centres and engage in the more active pursuits by association in preference to individual and more isolated occupations, I believe to be a law of our natures. Hence the rapid increase and constant tendency toward overcrowding in manufacturing centres to the neglect of agricultural pursuits. Thus is indicated the duty of the Legislature in so far as decentralization of population may be effected by encouraging agricultural pursuits, through government aid in the settlement of unused land, and a system of legislation to force by taxation, individual holders to forego prospective profits by speculative investments,—a clear constitutional right and practical method of opening to use a large proportion of the unimproved land of the State. By a discriminating tax high enough to cover the possible increase in value, it becomes valueless as an investment, or for speculation by withholding it from settlement. It would then be offered to actual settlers in such quantities as their necessities demanded and at its actual value.

The following is a statement of the number of Hollow Ware Glassblowers in the district and average wages earned at each establishment. Wages are by piece work:

	No. of Jour- neymen.	Average wages per month.	Average time employed.	No. of Jour- neymen out of employ.	Number of Apprent'es	Supernum'ry.
Williamstown.....	48	.....	.....	3	8	.....
Glassboro	48	\$73 00	Month	9	28	.....
Clayton.....	69	70 00	10 $\frac{3}{4}$	.....	.....	.....
Clayton.....	2	70 00	3	.....	.....	.....
Millville—Glasstown.....	45	100 00	9 $\frac{1}{2}$	.....	17	.....
Millville—Shutternville	56	76 00	11	.....	.....	.....
Millville—Shutternville	11	76 00	6	6	.....	6
Salem	28	71 00	10	.....	.....	.....
Salem	18	71 00	10 $\frac{1}{2}$	.....	.....	.....
Salem	22	71 00	12	1	6	.....
Bridgeton	17	65 00	12	.....	.....	.....
Bridgeton	3	65 00	7	7	6	.....
Tansborough.....	22	60 00	.....	.....	5	.....

The difference in the average wages is not so much on account of difference in price list as from local advantage and hours worked. The price list has been very near uniform throughout the district. The men have always contended for uniformity in prices, recognizing the fact that employers all sell in the same market, and notwithstanding the efforts of manufacturers to gain local advantages by a reduction of wages, they have been steadily resisted by the blowers, and to this fact we may attribute much of the present prosperity of all engaged in the business. This check has prevented the manufacturers from selling their ware below paying prices to undersell each other, hoping to make good their losses by a reduction of wages of the workmen, as has been the case in many other branches of industry, until the whole has been completely broken down.

The Hollow Ware Glassblowers are the only numerous body of workingmen in the district that have steadily maintained a trade organization during the whole of the past fifteen years. Notwithstanding, they have had no general strike since 1865 in the State, and only two or three of any note at any of the establishments within that period.

Whatever opinions men may entertain concerning the benefits of combination among workingmen for their mutual protection, we contend that in this, the only instance, in which organization has been successful in this part of the State, it has greatly

improved the condition of its members. Not only have they secured better wages by combining together, but it has tended to improve the whole craft, both morally and otherwise. It has tended to prevent strikes, and has improved the relation existing between employer and employees, thus utterly disproving the oft-repeated charge that workmen are sure to abuse themselves and those with whom they come into business relations, when organized, if not restrained by law. We believe the relations existing between employers and employees to be better in the glass trade than in any interest in the State. In no other interest do the two have more respect for each other, or where the employees are so mindful of the interests of employers. Only in a few matters do they disagree or act in hostility to each other. A few of the employers yet, through arrogance, try to prevent those who are prominent in the trade from securing employment, and do occasionally discharge men from their employment because they are appointed by their fellow-workmen as committeemen to transact business for them. This has been the case at one establishment the present summer, where four men have been discharged for this cause; yet there is less of this feeling than formerly, and when men who superintend the operations of others become sufficiently educated to enable them to understand their duty, and are taught to respect the rights of other men, and to know that mere superintendence does not make them masters, it will disappear altogether.

The system of store pay is co-existent with the commencement of manufacturing in New Jersey. Many of the towns were located on account of cheap fuel, and iron and glass furnaces were established many miles at times from any other settlement. It therefore becomes necessary that the proprietors should furnish the employees with provisions.

The system originated in a necessity that has long since ceased to exist; but the proprietors have continued it, and have frequently made it a means of extortion to such an extent as to be very oppressive to those whom they employed, and were forced to deal at their stores.

The evils and wrongs resulting from the system are not confined to the extortionate rates charged for goods, but men are frequently forced to trade beyond their wants in order to secure

employment, for those who spend the most of their earnings at the company's store are given the preference in work. As a matter of business, it is to the interest of employers to induce their employees to become extravagant.

To illustrate, suppose two men to earn \$800 each in a blast, if one deals but \$400 of his earnings at the store, and the other his whole earnings, the proprietor would make \$120 of the purchases of the one, while he would make \$240 of the purchases of the other. The result is, the one that spends most of his earnings at the store is given the preference over the one that is more frugal in order to save something for a time of need.

The evils of the system has long been such that the Legislature has been petitioned, year after year, to suppress it by law, but as yet nothing has been done that has had any effect in doing so.

The following table is a list of retail prices of groceries and meats in Camden, in July, 1878:

White wheat flour.....	90c qtr	Ginger, qtr.....	10
Choice family.....	75c qtr	Cinnamon, oz.....	5
Sugar, granulated	10	Alspice, oz.....	4
Sugar, white A.....	9½	Cloves, oz.....	5
Sugar, brown.....	9 and 8	Salt, bag.....	3, 5 and 6
Syrup molasses	10 and 18 qt	Mackerel, No. 1.....	16
New Orleans molasses	10 and 18 qt	Mackerel, No. 2.....	12
Crackers, Trenton.....		Mackerel, No. 3.....	8
Crackers, water	10 and 12	Codfish	
Crackers, soda.....	10 and 12	Raisins, Muscatel	15
Coffee, Rio, choice.....	28	Raisins, seedless.....	10
Coffee, Rio, Nos. 1 and 2....	22 and 25	Dried currants.....	10
Laguayra coffee.....	28 and 30	Irish oatmeal.....	10
Java coffee.....	35	Pure Canada oatmeal.....	
Tea, Oolong	40, 60, 80, \$1	Marrowfat beans.....	10 qt
Japan tea	80 and \$1	Medium beans.....	
Imperial	60, 80 and \$1	Hominy	6
Young Hyson	1 00	Cheese	12
Ham	13	Canned peaches.....	18
Shoulder.....	11	Canned tomatoes.....	10
Dried beef.....	{ piece, 20 cut, 35	Canned corn.....	10 and 15
Bacon		Dried peaches.....	
Salt pork	10 and 11	Dried apples	
Salt beef.....	10	French prunes.....	
Lard	10	Turkey prunes.....	
Soap, Babbitt's B.....	7	Yeast powder.....	12
Soap, New York.....	10	Rice, Carolina.....	10
Soap, Oleine.....	8	Bi-carb. soda	15 lb
Mustard	15 qtr	Cream tartar	5 oz
Black pepper.....	10 qtr	Butter	20 and 30
Red pepper	12 qtr	Steak, beef	16 and 20
Mace	14 oz	Stew, beef	10 and 12
Nutmegs, oz.....	10	Roast, beef.....	16 and 20
		Boil, beef	10 and 16

BOOTS AND SHOES.

Hand made double soled		Factory made.....	
French calf boots.....	\$7 50	Calfskin	\$5 00-5 50
French kip boots.....	6 50	Wax leather.....	3 00-4 00
Best kip, ordinary.....	6 00	Gaiters, split leather.....	2 00-3 00
Wax leather boots.....	5 00-5 50	Yankee stogies.....	1 25-1 50
Plain split leather.....		Ladies' shoes	2 25
Shoes for workmen.....	2 50	Ladies' shoes	3 00
Calfskin plain shoes	3 50	Boys' shoes.....	2 00-3 25
Stitched shoes, calf.....	5 50	Misses' shoes	1 75-2 50

COAL.

Lehigh—		Schuylkill—	
Stove coal.....	\$5 00	Stove coal.....	\$4 75
Nut coal.....	4 50	Nut coal.....	4 25

RENTS.

Four rooms, frame, without modern conveniences.....	Per m'th. \$7 00-8 00	Six rooms, with bath, according to location.....	Per m'th. \$14 00-18 00
Four rooms, brick, with bath and conveniences.....	10 00-12 00		

Statement of the number of men employed and wages received, at Wood & Co.'s iron foundry at Millville, in 1873 and 1878:

	Num-ber.	Wages in 1873. Per week.	Wages in 1878. Per week.
Moulders	17	\$20 00	\$12 00
Core makers.....	6	20 00	12 00
			Per day.
Helpers.....	9	10 00	1 08
Laborers.....	17	10 00	1 08
Carpenters	4	3 00	1 75
Machinists	2	3 00	1 75
Blacksmith	1	3 00	1 75
		Per day.	
Moulders, dry sand.....	4	5 00	2 00
Core makers, dry sand.....	4	5 00	2 00
		Per week.	
Helpers, dry sand.....	23	10 00	1 08
Laborers			

With loss of full one-third time.

The wages of skilled mechanics and laborers in the towns and

throughout the district do not differ materially from those quoted in Camden.

Farm laborers receive for single day's work \$1.00, with meals; seventy-five cents per day, with steady employment; \$10 per month for second-rate hands, and \$14 for best farm hands, with board and washing.

CHARLES H. SIMMERMAN.

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CHAPTER III.

FORESTRY.

RURAL AND VILLAGE ADORNMENT.

CHAPTER III.

FORESTRY.

The purpose of this article is more to draw public attention to the general subject of forestry in its relations to general State interests, than to indicate or devise any special system of measures for the consideration of State authorities to promote forest products. All general readers must have observed an awakened interest throughout the country in behalf of both public and private culture of forest and ornamental trees.

The United States government, with great propriety, siezed upon the Centennial year, to inaugurate a movement for "ascertaining the annual amount of consumption, importation and exportation of timber and other forest products; the probable supply for future wants; the means best adapted to the preservation and renewal of forests," &c., &c. The act of congress authorized the commission of agriculture to appoint a man of "approved attainments" to prepare a report, as indicated above. Dr. Franklin B. Hough, of Lowville, New York, was appointed, and his report was printed last winter. It is an exhaustive report, embracing every phase of forestry, his investigations having been extended to foreign lands through the medium of correspondence with European foresters and governments.

In another part of this report, we have considered and endeavored to enforce agricultural development as one of the essential industries to promote general prosperity within our borders. Forestry is closely allied to agriculture, and belongs to the class of soil industries which has been unwisely neglected until quite recently, in all the States.

The vigor with which this great interest is being advocated would seem to indicate a felt necessity to atone for past neglect. If we in any degree contribute to the awakening of a practical interest in the subject of forestry in our State, it will not be to

precede other States and communities in the same line of industrial enterprise.

We believe that immense bodies of land can be found in this State to furnish sites upon which to rear forest plantations of various dimensions and varieties of species, for ordinary domestic uses.

While the growth of trees for general building purposes is a matter of a generation or two, procrastination would seem to be unwise. We are aware that nearly one-half of the territory of our State (excluding water) is nominally woodland, but not as a rule of a desirable and productive character. The bulk of it lies in its primeval state so far as cultivation is concerned, several growths of wood having been cropped, or devoured by the flames, the surface remaining undisturbed.

Our theory is that the ultimate good of the southern belt of wooded counties is contingent upon the absolute clearing and improving of the lands by the substitution, as rapidly as possible, of new and diversified agricultural and horticultural industries. This process would bring into public view also invaluable water power now wholly unproductive, and they in their turn would bring population, enterprise and thrift.

We have no design permanently to denude this section of the state of wood or forest plantations, but to substitute new forests interspersed with other agricultural and mechanical industries. *Does it not appear to every casual observer that these pine wastes do not carry one-third as much timber as they might and ought?*

Let anyone place side by side the intrinsic value of the half grown, half dead wood, mostly of an inferior species, which now occupies for the most part five southern counties, with the estimated value of *half* of the same territory clothed with a thrifty, well-selected growth of modern forestry, and the result in favor of the proposed reconstruction would amaze the public. And yet this calculation could only compass the forest aspect, leaving the intervening sectional transformation unestimated. We do not regard this forecasting as in any sense improbable of future realization. But it is proper that we should return to what is more immediately in hand, and clearly within the province of this paper.

If all that is said and written is true in respect to the strength

and durability of the *Catalpa* tree, it seems to be one of the species to which we cannot give our attention to soon. While it is classified as a Southern or Southwestern tree, it thrives well in almost all sections of our country south of 42°.

Mr. E. E. Barney, of Dayton, has in the last few years devoted special attention to this tree, and the articles he has written about it have been collected and printed in a small pamphlet, and we will briefly reproduce the result of his researches. As Mr. Barney is a "veteran car builder," his thoughts and experiments in reference to woods ought to command public credence.

He regards the catalpa tree as one of the most durable species of timber, as having special adaptability to railroad and telegraph purposes. He establishes its marvellous durability by the most indubitable testimony. It is represented that General Harrison, when he was Governor of the Northwest Territory, found catalpa pickets in the old French stockade at Vincennes, that were still sound. A gentleman whose name is given, furnishes evidence of a catalpa gate-post being in the ground forty-six years. He dug around it to the bottom "and found it as sound as the day it was planted, no signs of decay whatever." Judge Upshur, of Indiana, was told by an old resident of Vincennes that he had seen logs from the catalpa tree, removed from the French stockade after being in the ground nearly a hundred years, in a perfectly sound state. Another case is reported of fence posts standing twenty-two years, "and still as sound and firm apparently as the day they were put in." The same source of information says, "it may be regarded as next to iron for railroad crossties," and "imperishable under or lying on the ground."

Mr. Barney says: "I recently tested pieces of catalpa cut from different trees, with a variety of wood, with the following results:

"Pieces of catalpa one inch square, broke—with the pressure applied at the centre between supports twelve inches apart—at five hundred and forty, five hundred, seven hundred and ninety, five hundred, five hundred and seventy-five, seven hundred and fifty-two and seven hundred and sixty-two pounds, respectively. Black walnut, under the same circumstances, broke at a pressure of one thousand and forty-two and eight hundred and forty-eight pounds. Ash, one thousand two hundred and sixteen and one thousand and forty pounds. Oak at nine hundred and thirty-

two and one thousand and eight pounds. Yellow pine, six hundred and twenty-four and eight hundred and forty-eight pounds. Norway pine, three hundred and eighty-four, five hundred and forty-eight, five hundred and eighty-four and six hundred and forty pounds. White walnut, six hundred and eight and four hundred and eighty pounds.”

“Five thousand pounds pressure on a block of oak one inch square, resting horizontally on a solid foundation, compressed catalpa to five-eighths inch, another pressed to five-eighths inch and another to one-half inch; same weight compressed three pieces to seven-sixteenths, seven-sixteenths and nine-sixteenths. White pine was compressed to five-sixteenths. Norway to five-sixteenths. White walnut to five-sixteenths. Yellow pine to six-sixteenths. Black walnut to ten-sixteenths and eight-sixteenths. Ash compressed one way only to fourteen-sixteenths, another to six-sixteenths.”

It has been well tried for railroad ties, and holds spikes well, and shows no more indications of mashing than oak ties. Wm. R. Arthur, formerly superintendent of Illinois Central Railroad, is represented as saying that the catalpa would make a tie for railroads that would last forever; that it was easily cultivated, was of rapid growth, and when planted in groves grew straight and tall as any forest tree; that he had several groves then growing on his farm which had been planted but four years and were twenty feet high; that he planted them for fence posts, but had subsequently learned they would hold spikes as well as oak and would not split. Hence their value for cross-ties.

Prof. Collet in the report of the Geological Survey of Indiana for 1873, says, “catalpa trees, two and three feet in diameter, are found in Knox county. One twenty-five inches in diameter had thirty-seven rings of annual growth, indicating an increase in size during that time of over 0.67 of an inch per annum. A catalpa gate post set in the ground by Col. Decker, in 1780, near the school house on Deshee creek, was cut up for firewood in 1871, and was found in fair condition, after doing service for nearly a century.”

Dr. John A. Warder, President of the Horticultural Society of Ohio, says, “So well satisfied am I of the great durability of the catalpa, the fine polish it will take, its great beauty as a cabinet

wood, and its value for railroad purposes, that I wish myself a young man that I might plant a quarter section with catalpa, four feet each way. I have several groves of four years growth from Dayton seed, planted on the hillside, seventeen feet high and twelve and a half inches in circumference, one foot from the ground."

Mr. Barney gives the following directions:

"Those wishing to plant in large quantities for growth for future use, can only obtain them by raising from the seed. The long bean-like pods that hang suspended from the catalpa tree, may be gathered any time in December or January, and stored in a dry place. As early in the spring as the ground is in suitable condition, take the seeds from the pods and plant in rows three or four feet apart, and one to three inches in the row. If all grow, they should be early thinned out to one foot. Those taken up may be replanted. The ground should be kept clean. When they are two or three years old replant in rows, four feet each way, that they may grow tall and straight. After twelve to fifteen years each alternate row should be cut out for fence posts and telegraph poles. In from twelve to fifteen years more the remaining trees will make six ties each if they have been planted in good ground. The first two lengths should be split or sawed through the middle, the next two flattened on the sides. The catalpa is particularly well adapted to this mode of manufacture, as it has only the merest film of sap, not thicker than paper.

"There will be two thousand six hundred and forty trees on an acre if planted four feet apart each way. The fence posts and telegraph poles obtained from cutting out each alternate row after twelve to fifteen years, will pay the entire expense of planting, cultivating and manufacturing of ties, so that each acre of land planted with catalpas will furnish ties enough for three miles of road free of cost, that will not require to be renewed for the next fifty years."

We had in our State in 1874 one thousand six hundred and fifty miles of railroad, to lay which we estimate over four million ties were used, which have to be renewed every six or seven years. To fence these lines of track on each side with four-railed fence, would require six million nine hundred and sixty-nine

thousand rails, and two million three hundred and twenty-three thousand two hundred posts. We have not less than two thousand miles of telegraph lines, requiring forty thousand poles, which have to be renewed from time to time, but at longer intervening periods than in the case of the railroad ties. We think it could be clearly demonstrated that railroad corporations in all the States, might derive essential future advantages from the establishment of catalpa plantations, from which, twelve to fourteen years hence, they could begin to draw from a perpetual source of forest products for cross-ties and other varieties of timber. The first outlay would be small, and the stockholders in corporations which thus embarked in forestry, who should survive to witness the maturity of the plants, might have occasion to applaud the foresight of their official heads.

How simple is the process for our farmers to grow their own fence and gate posts; our vineyardists to grow their own stakes and poles. The latter can be grown in eight years. The catalpa will flourish in almost any soil, though the richer and deeper, the more rapid the growth. In the West, river bottoms are the most conducive to their cultivation. Instances of successful culture on Cape Cod show that sea air is not injurious to their growth.

We will not confine our dissertation to the catalpa tree when there are other varieties of wood which are indispensable for building, mechanical and other useful purposes, and as easily cultivated. In the enumeration of trees adapted to this State, we have consulted several writers and reports upon forestry which need not be mentioned, from which we make a brief summary.

The *white ash* is a rapid grower, and the wood is of great value for manifold and well understood purposes. It thrives best in rich soil, but does not do well over gravel for it requires considerable moisture. Of the four varieties this is the best. The seeds mature in the fall but must not be allowed to become dry, keep in moist earth and sow fifteen inches apart in rows, in March or April.

The *chestnut* tree requires a dry soil and has a great aversion to clay. Slopes and hill-sides with comparatively lean soils seems to be well adapted to this tree. It is known to be a very rapid grower, fair sized posts being produced in eight or ten

years. They are propagated best from seeds planted four feet apart each way. Either plant the nuts when fresh, or retain them in moist earth through the Winter.

Of the *maple*, the most rapid grower is understood to be the white or silver species. The seed of all maples ripen in the Fall and must be kept damp until Spring. Sow in drills and cover over with an inch of soil.

The *white oak* is the most valuable of this family, though they are useful and grow most luxuriantly in rich and moist ground, clay soil preferable. The purposes for which oaks are generally used require large growths, consequently their propagation will not be regarded with favor.

The *black walnut*, for timber has no equal. Dr. Warder reports a growth from the nuts, of eight feet in three years. Dr. Dan. Millikin commends this as the finest timber tree. He says: "It is more than probable that within twenty years there will be demand for the white sapwood as well as the heart of walnut, and happy the man who can meet that demand with young trees. I am very much inclined to maintain that while this tree is good to plant for one's heirs, it is valuable at any stage of growth and as well adapted to our wants as any other species." Choose a rich soil; plant nuts in hills four feet apart each way in the Fall, and two-and-a-half inches deep, or keep the nuts damp and plant in early Spring.

Of the *black locust*, much can be said in its favor. Dr. Millikin says: "No wood is at once so hard, heavy, durable, strong and easy to grow. It is able to yield a fine return, even without cultivation. If nothing else is done, every farmer ought to have at least an acre of black locust trees." Dr. Warder sold to the city of Cincinnati locust timber at the rate of \$1,000 per acre, of spontaneous growth uncultivated.

The *cypress*, abounds in the Southern States, Virginia and Illinois, and it is said will do equally well in the "gravelly ridges of New Jersey." The wood is nearly as durable as cedar, and grows rapidly. It is represented that cypress stakes can be grown eight to ten feet long in five or six years, and ten thousand to the acre. Seeds can be procured from seedsmen. Sow either in the Spring or Fall in open ground. The plants should be moved the first year either into the plantation or into a

nursery, for the reason they make but few fibrous roots, and these could not be dug with the seedlings a second year. A group of cypress trees twenty-one years planted in Spring Grove Cemetery, range in girth from five feet eight inch to seven feet six inches. (Warder's report.)

New Jersey has not unfrequently been designated as the "Hoop-pole State," and there is no reason why the distinction should not be perpetuated to advantage under systematic forest culture. Western foresters don't hesitate to advocate the use of lands worth \$100 an acre for choice forest purposes. Andrew S Fuller, author of *Forest Tree Culturist*, say ten thousand hoop poles can be grown on an acre in from five to eight years, and that the rapid growth of sprouts after the first cutting, would make it a perpetual pole plantation. As the price of hickory poles for barrels and hogsheads is from \$15 to \$40 per thousand, such a venture would seem to afford assurance of a good profit.

European travellers of observation need not be instructed in reference to the predominance and value of the *pollard trees* on the continent, especially in France, where they border streams, irrigating ditches and boundary lines almost universally. Their branches are serviceable not only for wood, but for tying withes and rough baskets. The cultivators of the soil in France depend upon this class of trees for firewood, and in other ways utilize these perennial sources of profit.

There cannot be any question as to the propriety, if not absolute necessity for the agitation of the subject of forestry. The substitution of coal, iron, stone and brick, to such an extent for wood, naturally predisposes the public not to entertain serious apprehension in reference to forest exhaustion. It is not unlike many other subjects having reference to the future public welfare, in which there is danger of our maintaining a complacent attitude to such an extreme as to seriously imperil important interests. It is asserted by good authority that the consumption of wood, inclusive of exportation, constantly increases. The foreign demand must not be ignored, in its relations to the future. To be sure it is somewhat limited at present to special varieties of wood, but we can look forward with assurance that there will be a steady and increased demand for export, as American walnut, white ash, and oak, are in constant demand abroad for uses

there which can never be superseded by any other material. These points of interest we learn from Dr. Millikin's treatise on forestry, and from the same source we are informed that in 1866, sixty-three million oak staves were exported to France.

This last item has a two-fold significance and bearing, since the necessity for importing staves has arisen from the *neglect* of French forestry, a calamity not unlikely to happen in our own country.

In pleading for the protection and perpetuation of forests, *The Lumberman's Gazette* gives some interesting particulars of the amount of timber consumed every year in this country. "We have now," it says, "about ninety thousand miles of railroad; the annual consumption for ties or sleepers alone is forty million, or thirty years' growth of seventy-five thousand acres. To fence these roads would require at least one hundred and thirty thousand miles of fence, which would cost \$45,000,000 to build, and take at least \$15,000,000 annually to keep it in repair. We have seventy-five thousand miles of wire, which requires in its putting up eight hundred thousand trees, while the annual repairs must take three hundred thousand more. The little, insignificant lucifer match consumes annually in its manufacture three hundred thousand cubic feet of the finest pine. The bricks that are annually baked require two million cords of wood, which would sweep the timber clean from fifty thousand acres. Shoepegs are quite as important an article as matches or bricks, and to make the required annual supply consumes one hundred thousand cords of fine timber, while the manufacture of lasts and boot-trees takes five hundred thousand cords of maple, beech and birch, and about the same amount is required for plane-stocks and the handles of tools. The packing boxes made in the United States in 1874 amounted to \$12,000,000, while the timber manufactured into agricultural implements, wagons, etc., is more than \$100,000,000. The farm and rural fences of the country consume an immense amount of lumber and timber annually, but as we grow older as a nation, this consumption may, and probably will, be reduced by the more general use of live fences or hedges. Our consumption of timber is not only daily on the increase, but our exportation of timber is also rapidly increasing. Our staves go by the million to France annually;

walnut, oak, maple and pine to England, and spars and docking timber to China and Japan."

The perils and protection of forestry is being discussed in all countries. There is anxiety in Russia and Austria, notwithstanding in sections of those countries nearly half the surface is forest. We learn from recent reports of the department of agriculture that it is predicted in some of the provinces of Russia, that unless the wholesale destruction of timber be placed under effective limitations, within the next quarter of a century, finely wooded regions will become arid plains. Appeals to the government by agricultural societies and the public prints are made, to avert such a calamity. In Austria the government is actively engaged in measures to arrest the wasting of her forests. The ministry of agriculture in that country has recently published a report in which it is clearly recognized that the *diminution of forests occasions the droughts, failing harvests and consequent poverty of the people in some sections.*

We can learn an important lesson from what is being done under the auspices of the Austrian government, in what is known as the *karst grunde*, which is a tract of nearly a half million acres lying on the Adriatic coast, once covered with luxuriant forest, now denuded and incapable of plow-culture on account of its irregularity of surface. The desire of the government is to restore this forest growth, and the undertaking was inaugurated in 1864. The lack of practical knowledge of forestry embarrassed the selection of local directors of the enterprise, but the most promising results have been achieved. In 1868 the government appointed a professional forester and established extensive nurseries of forest trees of every variety. In four years these nurseries produced for the *karst* and other crown lands nearly twenty-seven million trees. *They were sold to individuals at cost, and furnished gratis to parties who promised to use them for the benefit of the public.*

In Prussia greater care over forest lands is exercised probably than in any other country. The rule there is to replant every year what is equivalent to the consumption. In Norway and Sweden the climate has been unfavorably affected by the inroads upon forests. In the former, planting-schools and nurseries have

been established and many denuded districts have been replanted.

As a matter of course where governments own and control so largely the forests, as is the case in Europe, they have both a pecuniary and sanitary interest in maintaining the area by the process of replanting. Our chief purpose in referring to the continental systems is to show the wide-spread interest in the subject, and illustrate the easy practicability of restoring denuded districts in our own country.

The national and State governments can do much to protect and perpetuate our forests without great cost, in the way of liberal laws, bounties, the appointment of foresters, and the establishment of forest nurseries. It must be admitted that the West has more immediate occasion for anxiety upon the subject of wood and timber than the East. But if the East is delinquent in this respect, the vigorous and enterprising West may reverse this forest inequality before many decades elapse.

Some of the Western States and Territories show but from 3 to 8 per cent. of forest area to farm lands. Of this number California, Kansas and Nebraska, have, through legislative co-operation, done effective work in forest planting, which has increased the value of farms, and added to the beauty and salubrity of the territory. Illinois and Iowa have offered a premium of \$1,000, payable in 1881, for the best ten acres of artificial timber. It is said that in some States a certain amount of taxes are remitted for each successful tree planted.

As remote as 1804, the State Society for Promoting Agriculture in Massachusetts offered the following prizes: "To the person who shall produce from seed the best growth of trees, not less than six hundred in the whole, and in the proportion of two thousand four hundred to the acre, of any of the following kinds of forest trees, viz: oak, ash, elm, sugar-maple, beech, black or yellow birch, chestnut, walnut, or hickory, \$25; if all of oak, \$50; claims to be made on or before the 1st of October, 1806."

This same society in 1876, offered premiums of \$1000, \$600 and \$400, for first, second and third best plantations, or not less than five acres, to be made of European larch and Scotch pine. The plantations must originally consist of at least two thousand seven hundred trees to the acre, and this land must be *poor*,

worn out, or unfit for agricultural use. They also offered \$600 and \$400, for first and second best plantations of five acres, or more, of American white ash, at first having five thousand to the acre.

Two brothers, Richard and Joseph Fay, of Massachusetts, have achieved most useful results in artificial forestry in the last thirty years, chiefly on the highest elevations on Buzzard's bay and Martha's Vinyard, abounding in granite boulders and poor, gravelly soil. Their attention was first devoted to spruces and pines grown from seed sown broadcast, and they imported very largely of pines, spruce, maple, sycamore, oak, alder, birch and beach. In 1846, Richard planted two hundred thousand imported trees, and afterwards added as many more grown from the seed, covering altogether two hundred acres of the most sterile soil. The European beach was more numerous planted than any other, in connection with oak, ash, maple, spruce, &c. Some of these trees are more than fifty feet high and fifteen inches in diameter, and the average of many is over forty feet in height and twelve inches in diameter. Thousands of cords of wood, timber and cross-ties have been cut from this tract to very great profit. The land was bought for about \$10 per acre. Many other plantations can be found in Massachusetts of greater or less dimensions, and all sufficiently successful to furnish convincing proof of benefits and profits to flow from similar enterprises wherever undertaken.

These facts will not be new to all of our readers probably, but they will remind them that there are many simple ways to obtain the object we have under consideration. It will not be very long before the Eastern States will have occasion, in some organized form, to encourage forest planting, and it may not be amiss for every agricultural community to bestow thoughtful attention upon a subject that must, sooner or later, force itself upon public regard at the East, as it has long since at the West.

In New Jersey the percentage of forest to farm land is nominally 28. We must remember, however, that a large proportion of this territory is nothing but *brush and charred, dead wood*. It is a misnomer to call this woodland, and thus misleads the public in respect to our State timber resources. If our wooded districts are burned over, as is stated, on the average every twenty years, (and in 1871 at least \$1,000,000 in lumber and wood was destroyed in

South and West Jersey,) we surely have occasion for thoughtfulness and apprehension in reference to future domestic supplies of wood and lumber.

Twenty-five States have a larger percentage of woodland than New Jersey, and it is probable that our present percentage of what might fairly be called timber land, is at best not above the average of that of other States. Consequently we are unable to present a very hopeful view of this State's forestry.

All wooded regions are devastated by fires to such an extent, we have seen it stated that in 1871 the loss was equivalent to the consumption of the whole country for ten years. That will be remembered as a most disastrous year for forest fires in all the States. In Ocean county alone thirty thousand acres were burned over. This we learn from Dr. Hough's Report of Forestry, and also that "in 1872, owing to the long drought in Summer and Autumn, fires were frequent in Southern New Jersey, one in August burning from fifteen to twenty square miles, worth, before the fire, from \$10 to \$30, and after it from \$2 to \$4 per acre." He says further, "On account of these fires so frequently running over this part of the State, there is but little large timber, although more than nine-tenths of the surface is wooded; and the residents are obliged to import nearly all the lumber require for use. Ship building has been almost entirely abandoned, and the products of the forest may be said to be cord wood and charcoal, instead of timber for construction, and use in the arts. Worse than this, the vegetable mould in the soil is burned out, and the possibility of reproduction reduced to narrowest limits, or altogether prevented. Moreover, the climate has been injuriously affected, and droughts are much more common than formerly, owing to the dry and parched nature of the whole country thus stripped of its vegetable covering, and left as a blackened desert."

We deem this an appropriate occasion to refer approvingly to another and more popular phase of forestry, in its combination with tasteful rural ornamentation, through hamlet and village associative agencies. There is so much in this scheme of voluntary association for rural adornment that is indicative of progress and reform in taste and social refinement, that we cannot refrain from

commending it with more than ordinary cordiality and earnestness, to all public spirited citizens of this State living outside of city limits, as a recent phase of co-operation of the highest merit, and worthy of universal adoption.

Massachusetts and Connecticut are the leading States in this movement, and numerous towns and villages in each have spirited and notably successful associations, which, in the last ten years, have wrought wondrous changes in highways, walks, public grounds, etc., where they have been organized. Their aims include measures "to advance the health, comfort, convenience and attractions of the township as regards walks, roads, drainage, the planting of trees, shrubs and flowers, the abatement of nuisances, the securing and establishing of open squares and places, the placing of seats, water troughs and fountains, the furnishing of judicious plans for rural architecture, gates and fences, and especially the establishing of reading-rooms and circulating libraries, and of suitable halls for literary and scientific lectures and social gatherings."

The compass of objects can be extended ad libitum, and embrace street lamps, preservation of fine trees, color of houses, embellishment of churches and school houses, regulations in regard to fences and the running of cattle and other animals at large, grading and gravelling of roads, walks, &c., &c. The establishment of water works, beautifying of lakes, and ornamenting of railroad depots, are legitimate objects to engage the attention of these organizations. Tree planting on public highways, public and private parks, is one of the specialties, accompanied by grading and keeping walks in order. No one can fail to appreciate the value of these various improvements, in their bearings upon public taste, emulation in the construction and ornamentation of public and private structures and their surroundings, neighborhood sociability and hospitality, and the cultivation of a taste for rural life and rural occupations, especially in the minds of children and youth, to diminish their excessive fondness for city life.

B. G. Northrop, Secretary of the State Board of Education of Connecticut, says: "Public interest in rural adornment is rapidly increasing in Connecticut. This good work should go on till not a school house, dwelling or street is left without the

simple and grand adornment of shade trees. A little foresight will show that no community can afford to be without a Village Improvement Association. In many towns such organizations have already done incalculable good in cultivating public spirit, quickening social and intellectual life, and enhancing the value of real estate."

Those who are in the habit of visiting New England towns and villages will readily appreciate the obvious advantages of these united efforts to render rural life more attractive and enjoyable than it is wont to be. New Jersey is by no means destitute of towns, villages and suburban districts of surpassing natural and artificial beauty. Our territory throughout abounds in scenery of unusual diversity and eligibility for the amplest exercise of taste in rural adornment. Proximity to two large cities not within our borders, but appositely situated, and in social and material interests sufficiently identified with our State to co-operate in a general endeavor to develop and render more attractive her rare domiciliary advantages. *Since we possess attractions, both to population and enterprise, it is the highest wisdom for us to employ our best faculties to make them as gainful as possible to every State interest.* Here is an opportunity presented for co-operation at variance with those hitherto considered in this report, which, in its scope and magnitude can furnish agreeable and profitable occupation for the bulk of our rural population, without materially interfering with ordinary engagements, or involving an outlay beyond the range of a majority of men, women and youth in every community. The system ordinarily in use, contemplates the adoption of a constitution embracing articles adapted to local circumstances, the money being raised by annual dues, which in no case need be burdensome in the least, especially where there is general participation, for, as in the case of good roads, good walks, and safe bridges, every inhabitant of a township or village is interested in whatever the association undertakes to do.

CHAPTER IV.

CO-OPERATION,
IN ITS WORKINGS IN EUROPE

AND ITS

ADAPTATION TO NEW JERSEY.

CHAPTER IV.

CO-OPERATION.

Co-operation, as a devise, in the interest of the labor classes in this country, has a circumscribed history, and we can refer to but few American illustrations of its workings, other than in distributive enterprises, and in these success has not in all cases been attained.

Our own country cannot furnish materials for an extended article upon the important subject of co-operation, as a system to utilize conjointly capital and labor for the mutual advantage of the working classes who participate in such associations.

The purpose of this article, we think, will be achieved more satisfactorily by a somewhat detailed history of co-operation in its various phases in England and on the continent, where it has been developed under conditions in some respects more conducive to success. Before we conclude what we have to say at this time, we will present what we have learned respecting experiments in this country in associated efforts for the social and pecuniary benefit of the working classes.

To the *Rochdale Pioneers* belong the credit of having established what afterwards became the most successful co-operative store in England. The principle of co-operation in behalf of labor had been a subject of experiment in Manchester, and even in Rochdale, previous to the movement that took permanent form in "Toad Lane," but they were upon a scale no less diminutive than primitive, and Dr. John Watts, in referring to their unpromising career, has left on record a graphic warning, applicable to kindred enterprises for all time. "In some cases, managers were appointed who had no sufficient knowledge either of goods or of accounts; in others, men were appointed who had failed in trade for themselves, and who repeated their experience for the societies; in others, again, the moral power was not

strong enough to resist temptation, and the stores would some morning be found vacant, except in accounts requiring liquidation. In most of them the desire to do a large business led to the fatal error of giving credit, which brought with it the necessity of getting credit, and its usual concomitant of having to pay higher prices for more materials. The trade books were filled with small debts, and ready-money customers were lost through the depreciated quality of the goods, and thus was dissipated the small subscribed capital of many a co-operative concern."

The Rochdale society was composed originally of twenty-eight weavers, who conceived the idea of self-emancipation from the injustice and extortion of the tradespeople of their town. They were frugal and honest flannel weavers, and as the sequel disclosed, thoughtful and sagacious pioneer traffickers in family supplies. The history of these provident men, and their co-operative scheme, is highly instructive and worthy of a detailed narration.

Their first united resolve was to become their own purveyors. At the outset they were free from all pecuniary embarrassment, but not forehanded. Capital was essential, but accessible, within the fraternity, only by weekly two and three pence instalments, which had aggregated to twenty-eight pounds when the first purchases were determined upon. When these enterprising weavers became lessees for three years, at a yearly rent of £10, of what was once a ware room, but then used as a chapel, in which to display their embryo stock, consisting of a few sacks of flour, one of oat meal, a hundred weight of sugar and a firken of butter, all laid in at *wholesale* prices, they were the unconcious founders of an establishment destined to be the prototype of hundreds which succeeded it, but by none excelled in magnitude and subserviency to the toiling classes they were designed to benefit.

The headquarters of this renowned society was in "Toad Lane," and for thirty-three years their transactions were continued in the original structure, which was subsequently enlarged to meet the wants of their extended operations. One of the fraternity was elevated to the position of salesman, which

was the remaining preliminary antecedent to the formal opening for business.

“But though the weavers had now got a place for a shop, they were half ashamed to open it. When the day and hour for commencing business had arrived, the little party assembled within to take part in the ceremony, were abashed at the largeness of the crowd assembled without to witness it. Some delay took place before anyone could muster up courage to take down the shutters, and when at last the ‘store’ and its contents were exposed to public view, all Toad Lane was in a roar. Loud and long were the shouts of derision that rose from a host of ‘doffers,’ a species of street-boy peculiar to the clothing districts, who, set on by persons who ought to have known better, stared through the windows or blocked up the doorways, evincing their characteristically precocious sense of the ridiculous by the nature of their comments on the modest display of the ‘owd weavers’ shop.”

So successful was the “opening” and sale of this initial stock for ready money, that no time was lost in replenishing the exhausted stores in increased ratio, and the venture was so visibly the precursor of profit and distinction to all future participants, there was no lack of suppliants to share with the adventurous weavers in the succeeding fortunes of the Toad Lane workingmen’s emporium.

Having indulged in a little humor at the expense of the brotherhood of flannel weavers, we will make amends by a credible tabular statement illustrating, with unusual effect, the practical results extending through a long series of years of a mercantile co-operative scheme.

YEAR.	Number of Members.	Capital.	Amount of Business done	Total Profits.	Per cent. on Capital.
1844.....	28	\$140	.....	.....	....
1845.....	74	950	\$3,500	\$111	12
1846.....	80	1,260	5,730	400	32
1847.....	110	1,430	9,620	360	25
1848.....	140	1,985	11,380	585	30
1849.....	390	5,965	33,055	2,805	47
1850.....	600	11,495	65,895	4,480	39
1851.....	630	13,925	88,190	4,950	36
1852.....	680	17,355	81,760	6,030	35
1853.....	720	29,240	113,800	8,370	28
1854.....	900	35,860	166,820	8,815	25
1855.....	1,400	55,160	224,510	15,530	30
1856.....	1,600	64,600	315,985	19,605	30
1857.....	1,850	75,710	398,940	27,350	36
1858.....	1,950	90,800	358,400	31,420	35
1859.....	2,703	135,300	520,060	53,695	40
1860.....	3,450	188,550	760,315	79,530	42
1861.....	3,900	214,625	881,030	90,110	42
1862.....	3,501	192,325	705,370	87,820	46
1863.....	4,013	246,805	793,160	98,355	40
1864.....	4,747	310,525	874,685	113,585	38
1865.....	5,236	393,890	981,170	125,780	33
1866.....	6,246	499,945	1,245,612	159,655	31
1867.....	6,823	642,175	1,424,550	208,095	31

We will search the records of any country in vain for the counterpart of a mercantile adventure so continuously prosperous for an equal term of years, as the above table discloses. To render the exhibit more emphatic and comprehensible at sight, we have modified Mr. Thornton's table, and, ignoring fractions, appended the percentage of earnings upon the capital, and find the average to be *thirty-four*, on an average yearly capital of \$140,407. With such an inspiring illustration of their benefit, it should occasion no wonder that there are more than one thousand co-operative stores in Great Britain.

As a scheme simply to earn good dividends upon small wage-labor accumulations, it is worthy of imitation in our own country; and moreover, what a cogent incentive it should awaken among the improvident classes of society, which we fear greatly predominate in all countries and communities, to husband their earnings, and in this simple and legitimate mode, utilize their household purchases for their own profit.

In the enforcement of this principle of co-operation we do not propose to rest upon this single unwrought and well authenti-

cated illustration of what may be achieved in any country by an earnest and honest endeavor, with the same end in view.

The success that attended this Pioneer Trading Society at Rochdale is set forth above so triumphantly, it will be of interest briefly to trace the various stages of its progress, with the noteworthy branches of trade grafted on to the original grocery business. As early as in 1847 there seemed to be a necessity to add to the stock in trade, cotton and woolen fabrics to a moderate extent. In 1850 a butcher's shop was appended, and this soon became such an important adjunct that a slaughter house of large dimensions was erected, and in the first six months of 1867, the total number of oxen, sheep, calves, pigs and lambs slaughtered was 2,023, and the sales therefrom reached 347,851 pounds. In 1852 shoemaking, tailoring and other manufacturing operations were commenced to furnish supplies for their customers. Coal was added, and in 1867 a bakery introduced. So rapidly did the business increase that it was found necessary to occupy the entire Toad Lane edifice, and by this time on special days of the week, the street and the enlarged ware rooms swarmed with jostling, chatting, operatives in groups and phalanxes, intent on speedy release from the impatient throng.

Among the crowd were youths and others musing on something else than flour, pork, sugar and coffee. The library and news-room were now replete with the mental aliment this numerous class were in pursuit of. Newspapers and magazines attracted hither great numbers whose only leisure and opportunity of reading were thus provided for. A circulating library occupied a librarian in exchanging and renewing books.

Accessions of members and capital, and the growing popularity of this establishment obliged the managers to give their attention to more diffused lines of trade, and to the establishment of branch stores in other sections of the city, to be more accessible to the wide-spreading circle of share holders. The number of branches grew to ten, and the co-operators determined also to change the base of operations and erected at an expense of \$60,000, a new central store, though still within the confines of Toad Lane. The new structure must have been a surprise to the denizens of Rochdale, for it was the architectural climax of the town. It being a place of rendezvous, and general

headquarters for the ramified transactions of the society, an immense assembly room, board room, etc., were provided. An educational committee had in charge the library which already contained nine thousand volumes, $2\frac{1}{2}$ per cent. of the net profits of the society being annually set apart for library purposes, which sum now exceeds \$5,000 a year.

The new building and several of the branch stores were now owned by the society. "Besides the real property wholly theirs, they have large shares in that of the Rochdale Flour Mill Society, and of the Rochdale Co-operative Manufacturing Society, two offshoots from their own body, of whom the former possesses a corn mill and malt kilns, constructed at an expense of \$100,000, and the latter a cotton mill that cost them at least \$250,000. So has the germ, deposited only five and twenty years ago in the 'owd weavers' shop,' already increased and multiplied."*

The co-operative feature of these stores has rendered them extremely popular in the manufacturing towns, and in the large cities equally so, and not unfrequently amid large populations, counterfeit establishments, assuming the aspect of labor co-operative societies, sprang up. It is said there are twenty such in London. This new system of furnishing supplies to consumers, upon the principle of mutual participation in the profits, has enlisted the sympathy and approbation of many prominent men of wealth and influence in England, so that it may be looked upon as a permanent and practical method of extending relief to the wage labor classes. Mr. Gladstone is represented as being among the British statesmen who are champions of co-operative stores, the total number of which in Great Britain is variously stated to be between one thousand and twelve hundred, with a membership of near one million, and a total capital of from \$10,000,000 to \$12,000,000, upon which \$2,000,000 of dividends would be reasonable upon the Rochdale and Halifax basis. The former, which we have fully described, is perhaps the best conducted, and surely the largest of any.

The Halifax store is represented to be nearly equal to the Rochdale. It has more branches, and its line of business much more diversified, extending its agencies into the outskirts of the

* W. T. Thornton.

city. The central store is conducted upon a scale of convenience and economy rarely to be met with elsewhere in any department of trade. The management of this immense establishment, as in that at Rochdale, is wholly in the hands of those who had previously been wage laborers chosen by the Central Committee with reference to their honesty and expertness, both qualifications deemed essential by all managers of like institutions.

It is usually the practice to limit holders of shares in these stores to one hundred, or five hundred dollars in amount, the shares being five dollars each; and no individual is permitted to represent upon voting occasions either by proxy or as trustee, more than the one hundred shares. This will be recognized as a wholesome safeguard against combinations to centralize power. Such restrictions as we have indicated, together with the economy and proverbial honesty with which the vast business of these associations is transacted, could scarcely fail to render them successful. The managers are taken from the ranks of the toiling shareholders and six hundred dollars annual salary seldom fails to secure the services of those who meet the Washingtonian requirements, of "capability and honesty."

We have not mentioned all that contributes to the financial success of these societies. The credit system is eschewed apparently by most of the partnership stores, and the avoidance of bad debts is not the only advantage accruing from it. The society is enabled from its current receipts of ready money, to replenish the stocks with the customary discount for cash payment, and there are other well known benefits flowing from the "no time" system. The purchasing agent is always ready to take advantage of depressed markets, from whatever cause; and a very material saving in office work, collecting agencies, &c., is realized.

When we consider that the traffic of these establishments is mostly in staple articles of consumption by the middle and labor classes which are in constant demand, and only in a small degree hazardous to "stock up," and that the process of sale and distribution is conducted with scrupulous economy; and moreover that the shareholders constitute a large body of assured customers, there is no occasion for wonder at their success and

popularity with the classes which derive the most benefit from them.

A plan has been adopted by most of the managers of these stores by which the benefits of co-operation may be extended beyond the share-holders, so that outside customers may share in the profits upon their purchases. They are not unlike other trading establishments in which success is dependent upon economic and judicious management and the volume of business done. It would not be quite equitable for non-shareholders to participate in what might be denominated residuary profits reserved for those who have capital in the concern.

To obviate this injustice and secure to the non-shareholders the ratable dividend upon his quarterly purchases, he receives a tin ticket on the face of which the amount of his purchases is stamped.

It is understood that five per cent. per annum is the fixed dividend upon the capital, and also that another percentage (at Rochdale two and a half) is to be reserved for the library and other educational purposes for the behoof of all the patrons of the store, and what remains, is quarterly dispensed to the holders of the tin tickets in proportion to their purchases for the quarter.

From what has been said, it is clearly observable that this form of co-operation has been in a high degree successful in England, and that it has been productive of good moral as well as material results, to the classes whose welfare they were designed to promote.

These societies furnish the opportunity for those among the labor classes who have innate frugal habits, to cherish them, and invest their savings, however small, safely, with a well assured probability of realizing a profit upon their wage-labor resources. There are other advantages inherent to the system, which is perhaps worthy of primary consideration. All consumers and purchasers at these stores have the assurance that they will be fairly dealt with; that the quality of their purchases can be depended upon; that the prices are graded low, and a dividend proportioned to the amount of their purchases reasonably certain to be forthcoming at the end of the quarter.

A member of the Workingmen's Co-operative Society at Lancaster, England, says of it:

"It made something out of nothing ; without work, effort, without sacrifice on their part, it gave them a result. For instance, in 1860 I joined the store, paying £1 (or \$5) for a share. In 1870 I wanted money. I had never withdrawn any dividend up to that time, and a very small portion of the wants of my family had been supplied from the store, but when I asked what there was to my credit I was told there was £53 (or \$265), which sum I then withdrew. So far as I am concerned that was a creation. I had done nothing for it. This store and its branches made about £16,000 (or \$80,000) a year profit. It devoted 2½ per cent. to educational purposes—that was \$200 a year. * * *

"It is estimated that the wages in this kingdom amount to £325,000,000 a year. If the working classes should all become members of co-operative stores, paying a dividend, not of 1s. 10d. a pound, as the Lancaster store paid, but even of 1s. 6d., they would save every year £24,375,000. If that could be carried on steadily for a few years, and invested, say at five per cent., if the addition were made for fifteen years, the result would be the saving of £605,482,680 ; that is to say, it would be quite enough capital to permanently employ the whole of the working population of the kingdom. They could all become their own masters in fifteen years."

These are surely strong incentives to patronize the Rochdale method of advancing the prosperity of the workingman. How these motives appeal to the prudently-inclined laborer to husband his earnings and expend them to the best advantage! The inducements to resort to this class of stores with cash in hand, has certainly wrought extensively upon the minds of the English people, as we have abundantly shown. Mr. Holyoake in his "Self Help," says, "The whole atmosphere of the store is honest. In that market there is no distrust and no deception, no adulteration and no second prices. Buyer and seller meet as friends. There is no overreaching on the one side, and no suspicion on the other. Those who serve, neither hurry, finesse nor flatter. They have no interest in chicanery. Their sole duty is to give fair measure, full weight, and pure quality to men who never knew before what it was to have a wholesome meal, whose

shoes let in water a month too soon, whose waistcoats shone with devil's dust, and whose wives wore calico that would not wash. There were newsboys in the market like millionaires, and, as far as pureness of food goes, live like lords. They make their own shoes, sew their own garments, and grind their own corn. They buy the finest sugar and the best tea, and grind their own coffee. They slaughter their own cattle, and the finest beasts of the land waddle down the streets of Rochdale, for the consumption of flannel weavers and cobblers."

I will refer to but one of many wholesale stores, which is known as the "North of England Co-operate Wholesale," which sprung from a veteran Rochdale pioneer. It limits its sales to retail partnership societies, and is conducted with Rochdale economy and square dealing. The quarterly balance sheet in July, 1870, exhibited the amount of sales for the quarter, to two hundred and seven societies, \$511,710, and a profit of 20 per cent. on a capital of \$136,250.

We are tempted before we close this report of co-operation in England, to quote from Thornton the following individual partnership results: "A, who in 1850 began by depositing 1s. 3d., and afterwards paid in four successive quarterly instalments of 3s. 3d. each, making 14s. 3d. in all, was then able to stop paying in cash, for the drawbacks, which had meantime been entered to his credit, had raised his subscriptions to the shareholders' minimum of £5. Leaving this untouched, he drew out, between January, 1851, and December, 1860, a sum of £41, in all, which he had acquired in the quality, not of shareholder, but of customer. B, having paid in 15s., gained in ten years £18. C, in 1850, held one £5 share. He never afterwards paid in anything, yet in 1860, though he had drawn out £115 during the interval, he had still £10 left. D, an old woman, being advised to draw out her money from the store, which she was assured was going to break, replied with magnanimity worthy of a Spartan mother, "Well, let it break. It will break with its own. I have only paid in one 1s., and I have £50 there now."

At the London Co-operative Congress, held in 1869, it was stated that stores modelled after those we have described were being rapidly introduced in Europe. In Germany between four and five hundred, with a membership of fifty to sixty thousand,

were in operation and whose annual sales amounted to \$20,000,000. In France there were five hundred, mostly in the smaller towns; but few in Paris; twenty-five in Lyons. In France they were generally upon a smaller scale than elsewhere, and do not embark in lines of trade other than groceries, meat, bakeries, clothing and household articles. In Denmark, Sweden, Norway and Switzerland they were ten years ago being introduced. We have thus far dwelt upon co-operation in the single application of the principle to stores, and have clearly shown its practical subserviency to the welfare of many thousands of England's operative classes. We propose now to view its workings in another aspect, partaking more of the nature of *self employment*, which, in theory at least, may be regarded as the ultimatum in the adjustment of the question which is the occasion of world-wide discontent.

Thornton says, "The idea of industrial co-operation in its highest and purest sense—in the sense, not of partnership between a capitalist employer retaining in his own hands the entire management of his business, and work-people admitted by him to an interest in the concern in a degree limited and on terms dictated by himself, but of the association of work-people, who themselves providing all requisites for their own employment naturally arrange, also entirely among themselves, on what conditions they are to work—appears to have originated, or at least to have first become practically embodied in France, soon after the Revolution in 1830." * * For the complete realization of this idea certain things are essential. A number of workmen having continued to procure the needful tools and raw materials, must agree to work together at the same trade, under directors chosen by themselves from amongst themselves, and must further agree that the entire net proceeds of their industry shall be divided in some pre-arranged proportion among all who have contributed, whether by their labor or their capital, or by both, to the joint production. Only when, or only in so far as all these conditions are fulfilled, is the higher range of co-operation attained."

France was the pioneer in these societies, as England was in those we have previously narrated. At one time there were more than one hundred in Paris, but the number has got down to

forty, from failures and other causes, and eighty are scattered through the departments, with varied degrees of success attending them.

The European governments and people are uniformly considerate and helpful in furtherance of the welfare and happiness of the toiling masses. Measures to secure continuous employment and contentment of the people constantly agitate the public mind. The emergency arose in France in 1848 for the authorities to take some action in the interest of the working classes. We have shown that the theory of industrial co-operation had assumed definite form in the minds of a few workmen, but the lack of capital impeded the rapid expansion of the new theory.

At this juncture the Constituent Assembly voted an auxiliary fund of 3,000,000 francs, to encourage thrifty and enterprising skilled laborers to embark in this untried scheme, designed to secure to the workman the entire profit on his labor. An agent was appointed to be the custodian of this fund, and to see that it was judiciously apportioned. The first application for a loan was from several hundred *journeymen piano-forte makers*, who evidently had misconceived the purpose of the assembly, otherwise they would not have had the temerity to petition for 300,000 francs, or one tenth of the total appropriation. To make a short story of this prodigious and ill-advised copartnership, a smaller union of fourteen was formed from the original projectors of the enterprise, piqued and determined not to renew the application for State aid, scraped together from their united surplusage ten francs, which was increased by the contributions of a few sympathizing friends, to a total working capital of 229½ francs, which was supplemented by the aggregate materials and tools belonging to the associated fraternity, valued at 2,000 francs. On the 10th day of March, 1849, these brave piano makers were ready to start business. The first year's trials and family sacrifices of these fourteen associates would have discouraged and disbanded a less resolute band of co-operators.

Their first sale of finished work was to a baker for four hundred and eighty francs, payable in bread, which was the epoch of brightening prospects, and continuously increasing weekly earnings, enabled the partners to leave more in the concern than they drew out. What remains to be said of this enterprise is in

a high degree commendatory of the system. At the end of 1850 the capital had accumulated to 32,930 francs. Subsequently, the copartnership was divided into two, one of which in 1854 had a capital of 56,000 francs, and in 1863, it had become 163,000 francs, afterwards 185,000 francs, where we leave it to refer to several other associations in Paris.

A *printer* by the name of Remquet organized a partnership of fifteen fellow-workmen. They secured a loan of 80,000 francs from the State appropriation under the following stipulations; the rate of wages was fixed for all kinds of work, and twenty-five per cent. of the earnings was retained to form a capital stock, but no dividend was to be drawn from the concern during the term of the partnership, which was ten years. When the ten years came round, after paying back the government loan, the net capital remaining was 155,000 francs.

A third society, of *whitesmiths and lampmakers*, was formed out of a preceding defunct association, comprising, after various reverses, a constituency of forty-six, which afterwards became one hundred, with a capital in 1858 of 50,000 francs, 20,000 of which was profit. Six years later, the capital was 90,000, with a business of 120,000 francs.

The earliest of all co-operative societies still in operation, is the *jewelers*, dating back to 1831, which comprised eight workmen, each of which put in twenty-five francs. Moderate success had attended them, until 1849 a government loan of 24,000 francs enabled them in nine years to do a business of 140,000 francs, and earn dividends double the amount of their wages. A few years later they had accumulated a capital of 100,000 francs, upon which twenty per cent annual dividends was earned.

As the purpose of these recitals is to furnish, from authentic sources, instances of successful industrial co-operation, we will venture to refer to two more in Paris, followed by the results of a group of Parisian societies, and then return to English records of industrial experiments.

In 1848 nine journeymen *cabinet-makers*, with three hundred and sixty-nine francs worth of tools and one hundred and thirty-five francs capital started in their line of business. By speedy accessions this small number of associates reached one hundred and nine. A loan of twenty-five thousand francs was obtained

from the State for a period of fourteen years, subject to 3 and $3\frac{1}{2}$ per cent. interest. To abbreviate, in 1855 their capital was 123,000 francs. In 1857 it had become the leading concern of its sort in Paris, and turned out an annual product of 400,000 francs. The membership was now one hundred and sixty-five, and it is noteworthy that they were allowed wages by agreement according to merit, the weekly average being 25 francs, the lowest 20, the general 40, while a few possessing skill and taste of a higher order, receive 50 francs per week. A most successful society remains to be described singly, viz., the Paris *masons*, which was started in 1848, by seventeen with a capital of 362 francs. In 1858 the membership was eighty-five, and from three hundred to four hundred auxiliaries, with a capital of 180,000 francs, upon which the yearly profits were 56 per cent. These profits were the results of contracts for building several costly mansions in Paris. In 1860 their capital was 362,500 francs. In 1867 it took the contract to erect the splendid Orleans railway station. It is stated that in addition to their wages each shareholder received a bonus of 7 francs and 50 centimes for each day's work, (which, it should be observed, quite doubled their wages) and 28 per cent. on the capital he had invested.

We referred to a group of Parisian societies whose operations were combined to exhibit a general result. The statement comes from a gentleman from Manchester, England, whose words we will quote: "The number of societies was fourteen. The occupations pursued by them are those of *jewelers, chair makers, masons, tanners, turners, file makers, last makers, spectacle makers, locksmiths, carriage-frame makers* and *house painters*. At the end of 1862 the total number of members was three hundred and forty, and the number of hired workmen employed by and working with them, six hundred and eighteen. In eight of the fourteen societies wages are paid by the piece, in the others by the day, according to capacity; the wages of individuals being represented as ranging from £48, or £50 to £60 per annum. In all, in addition to wages, the workmen get a larger or smaller share of the profits. In some cases all the profits are divided amongst them in the ratio of their wages, and in others three-sevenths or six or nine-tenths are similarly distributed. Three societies divide equally among the workers without reference to

wages; one divides in proportion to capital and wages added together, and one, in which none but members are employed, on capital only. The aggregate amount of capital of all the fourteen is £36,122, with which the amount of business done in the last year recorded was £106,678, and on which the profit realized during the same period was £8,298, or very nearly twenty-three per cent."

In Lyons there are three large societies, of which the largest, the "*Societe des Tissuers*," has eighteen hundred members, and the "*Association des Rubaniers*," twelve hundred members, with a combined capital of \$240,000.

We feel justified, in order to impart additional emphasis to this phase of co-operation, to re-cross the English channel and return to Rochdale for the first illustration of British industrial co-operation. It will be remembered that we referred to the "Rochdale Co-operative Manufacturing Society" as being one of the "Rochdale Pioneers." This society dates from 1854, and was organized for the prosecution of the *cotton business* upon a scale compatible with the dimensions of a single room. The first year's business electrified the denizens of Rochdale to such a degree that large additions to the membership and \$25,000 capital was the result. This necessitated additional room and looms, and two years more of prosperity enabled the society to erect a new mill at a cost of \$250,000. While the cotton business of England was seriously paralyzed by our war, this society, with three hundred operatives, earned between seven and eight per cent. on their greatly enlarged capital.

It will be quite a come down from the last example of co-operation, to speak of two others upon a very diminutive scale in Manchester. Six *tailors* and nine *hatters* occupied rented premises, each carrying on their respective trades independent of the other. The first half year the tailors had sold of their products to the amount of £495, the amount of their capital being £173. The distribution of wages for the six months was £169, (or \$141 each,) and £16 of profit had accrued which remained undrawn.

The hatters were enabled to make a somewhat better exhibit. They started with a capital of £38, which in 1863 had become £600, entirely the accretion of profits. This year was not very prosperous, owing to the advance of raw materials and other

causes; the net profits were but £20, but £300 had been distributed as wages among four active members, the others having been employed only occasionally, but were entitled to their pro rata in the surplus profits, after the 5 per cent. on the capital was paid. Five years later experience did not render these two concerns able to show very flattering results for co-operative work. The hatters had added £150 more to their capital, and six of their number had steady employment. But the tailors had transgressed the fundamental principle of successful co-operation by selling *on credit*, and thus £300 of assets were jeopardized in bad debts. They afterwards recovered other lost ground in consequence of this misstep.

Rochdale furnishes another co-operative experiment, but so recent as to offer only conjecture as to its feasibility. The proprietors of the society define its purpose to be the "carrying on the *wire-drawing*, and *card-manufacturing* business on the *bonus on labor principle*." It was started with thirty-five members, who furnished the capital, which was entitled to $7\frac{1}{2}$ per cent. interest, and the remainder goes to the workmen.

There are several recently formed societies in London and vicinity, of which we can only refer to their organization:

The "*Framemakers and Gilders*," with a capital of £2,667, twenty-three members, six of whom with the three managing directors, are workmen in the business.

The "*London Co-operative Cabinetmakers' Society*," with eighty-three members, nine of whom were working men, and turned out in amount the first year £1,205.

The "*The Perseverance Boilermakers' Society*," with nine members and £31 capital, did £545 of business the second year.

We do not deem it necessary to further multiply examples of *productive* co-operation wholly the creation of workingmen, whose scanty surplus in many cases at the outset, entitled them to rise to the dignity of shareholders only to the extent of 1s. and 6d. The number might be greatly extended by passing again to the continent into Germany, where there were, many years ago, twenty or thirty, one of the most notable of which is at Chemnitz, which started with four hundred members and a capital of £6,000.

At Freiburg, Switzerland, was one of a very prosperous character, that of *watchmakers*, fourteen of whom began with £400

capital, and the first year earned 60 per cent. above liberal wages.

The phase of co-operation most upon the minds and hearts of the labor class in our country probably is that denominated "productive co-operation," or "industrial partnerships." Co-operative stores have been shown to be both practicable and vastly useful in behalf of wage-laborers, as well as the communities in which they are established, across the ocean. Co-operative societies have also been equally well exemplified contrivances for self-employment of work-people in industrial pursuits of their own choice and wholly under their own management.

This is unquestionably the type of co-operation most worthy of consideration in this country. It secures to the participants the *entire proceeds of their industry, distributed upon principles of equity based on skill and merit.* The conditions of these co-partnerships, like all others of greater or less magnitude, must be pre-arranged, and the best results therefrom will be attained under the management of well chosen agents to conduct the business.

The right of every worker under this method of procedure to share in the common gain, is clearly definable in proportion to his individual contributions of capital or labor. As all the co-operators are supposed to belong to the wage-class, possessing various endowments of skill and taste, hand and head rivalries here have unlimited scope in the acquisition of divisible profits.

We will now endeavor to exhibit another phase of partnerships in industry, still deriving our illustrations from abroad. The capitalist necessarily becomes a participant and an essential factor in the greatly enlarged productive operations now to be considered.

Co-operation, in the sense in which it is now under review, is an expedient devised to compass advantages unattainable by individual effort. It is undoubtedly the offspring of modern discontent which has been incited and fostered to such a degree as to produce wide-spread and perilous antagonism between employer and employed.

It is not the purpose of this bureau just now to investigate or discuss at length the causes which have led to the prevailing conflict regarding the division of profits and the diffusion of wealth. *No one will venture to affirm that reforms in our social*

relations, are inadmissible, but it surely requires considerable courage at this stage even for a dispassionate observer, to meditate intervention in a case so fraught with complexity, and in which the divergence between classes seems rather to broaden than contract. The controversy has not all the demerits located on one side, although the following quotation mutters a quasi conviction that in England it is otherwise. Mr. Mills' partiality is wont to gravitate in the opposite direction from this sentiment extracted from his "Political Economy:": "the rich are regarded as a mere prey and pasture for the poor—the subject of demands and expectations wholly indefinite, increasing in extent with every concession made to them. The total absence of regard for justice or fairness in the relations between the two is as marked on the side of the employed as on that of the employers. We look in vain, among the working classes in general, for the just pride which will choose to give good work for good wages. For the most part, their sole endeavor is to receive as much, and return as little in the shape of service as possible."

We will proceed with our exemplifications of the present partnership system introduced by *M. Leclair*, a *house painter* in Paris, which was the result of unwearied endeavors to establish such relations with his men, as would afford permanent and harmonious prosecution of his business. For many years he tried to attach them to his service by liberal wages and kind treatment, but was unable to endure their lack of attention to his interests in his absence, until it became as he says "unsupportable to live in close and hourly contact with persons whose interests and feelings were in hostility to him."

He came to the rational conclusion that continuous prosperity of any business was largely dependent upon the amount of *interest and fidelity with which employees serve their employers*, and that the surest way of securing even-handed justice from the dependent class, was to establish as near as possible an *equilibrium between compensation and faithful service*. He was thus led to scrutinize the qualities of his men and to adopt a system of practical recognition of *merit over demerit as a basis of reward*. This is a principle about which there should be no discord, and its universal adoption would be remedial and ennobling.

The outlines of M. Leclaire's plan, as announced, contemplated an allowance of five per cent. interest on his capital, and a salary of 6,000 francs as manager, and a division of the remaining surplus among the chosen participants, including himself, in proportion to their respective earnings.

The integrity and uniform bearing of M. Leclaire towards his men reconciled them to acquiesce in the adjustment at the end of the year of all the prearranged conditions. The shares and the amount distributed were determined by himself.

It will be observed that among the prerequisites to this form of co-operation, *each party must feel assured that throughout their intercourse, promises and performances must be alike sacred.*

The first visible fruits of this partnership arrangement, which was inaugurated in 1842, were diminished idleness and increased alertness on the part of those who were ambitious and hopeful of additional gains from being participants with M. Leclaire in the profits of the business. The results of the first year were a surplus which, when divided, nearly *doubled the earnings* of all who had been elevated to the dignity of partners.

Under some modifications of his plan, M. Leclaire continued his business for many years, taking in two partners, but retaining the co-operative feature with uniform success.

We must forbear to speak in detail of other partnerships similar to that of M. Leclaire, but simply name a few. *M. Dupont* was the manager of a *printing concern in Paris* employing three hundred men, upon still a different system of sharing profits with the operatives. In this case, the surplus belonging to the wage-class was retained by the employer with compound interest added, until the owners of the concern retired. *M. Gisquet*, proprietor of extensive *oil works* at St. Denis, distributes four per cent. of his profits to his men, in proportion to their wages. *M. Godin Lemaire*, at Guise, employes nine hundred men in an *iron foundry*, and has introduced the distribution of profits among them.

There are some notable cases in England worthy of mention under this head. *Henry Briggs' Son & Co.* are the owners of several *collieries*. For ten years they were subjected to vexatious and unbearable disturbances, for causes it is not necessary to enumerate. In 1865 they organized themselves into a joint stock company, retaining a two-thirds interest themselves, and

offering the other third to the public in £10 shares, desiring especially that their workmen should become shareholders. The conditions were that, after reserving a reasonable per centage for use of capital, etc., when the profits exceed ten per cent., five per cent. of that excess should be distributed among the managers, agents and laborers as a *bonus in proportion to their earnings*. Previous to this departure there was but one year when the company had made ten per cent., so they felt that the change did not involve much risk. Consequently the proprietors did not claim any credit for subsequent successes. To abbreviate the narrative, the first year's profits were fourteen per cent., two per cent. of which went to the workmen. The second year they were sixteen per cent.—three to the workmen. The third year they were seventeen per cent.—three and a half to the workmen. The totals distributed to the work-people in per centages have been £1,800, £2,700 and £3,150.

The material and moral results of the Briggs partnerships are many and of a most hopeful character. The £10 shares advanced to £14½. The men became industrious, temperate and contented. The managers say: "The result was most admirable. When the first yearly settlement came round, many left the office with a £5 note in their possession for the first time, and some few with two. *We have at Whitwood worked out a true remedy for these evils, (those of strikes,) not a cure only, but a prevention, we are convinced; a remedy which has transformed that village from a hot-bed of strife and ill-feeling between employers and employed, into a model of peace and good will.*

"On the 1st day of July, 1865, the new system was inaugurated; since that date no strike has occurred; scarcely a day's work has been lost from any avoidable cause; we have not found it necessary to bring a single case of neglect of work by any workman before the magistrates. In fact, a reign of peace and prosperity has succeeded a state of perpetual strife and suffering."

The great *carpet* firm of *John Crossley & Sons'* is almost as well-known in America as it is in England. They announced in their articles of co-partnership thirty-five years ago that "of all the net profits we shall make, we will give away one-tenth for charitable purposes," and the record indicates that this by no

means constituted the sum total of their benefactions. We do not refer to this case as being in special unison with the partnership principle now under consideration, although it bears that interpretation in a limited sense. About ten years ago this company organized itself into a joint stock association of large dimensions, the capital being £1,100,000 in £10 shares, eighty thousand of which they reserved for themselves, the remainder being held by one thousand one hundred and thirty others.

It was the purpose of these benevolent proprietors to enlist as shareholders, parties practically associated in the business; their success however in this endeavor did not compass to much extent those ranked as operatives, but chiefly comprised the higher grades of employees from foremen up to superintendents, of which there were one hundred and fifty. The total number in the service of the company exceeded five thousand.

They made liberal offers to encourage their work-people to become shareholders, and a goodly number availed themselves of these terms, and were the recipients of from 12 to 15 per cent. dividends, and saw their shares rise from £10 to £17.

The table published above, at the beginning of this article, contained statistics relative to the Rochdale enterprise, from 1844 to 1867. We have since been put in possession of the following facts relative to that and kindred enterprises from that date up to 1874:

From 1867 to 1874, the Rochdale Pioneers were invariably successful. At the beginning of 1874, its membership exceeded seven thousand; its assets were \$927,215; its capital \$868,055. The sales for 1873 amounted to \$1,436,060, and the disposable profits, \$159,785. By comparison with our previous figures, the above do not show anything more than a healthy continuance of the enterprise, sufficiently indicative however of undiminished popularity.

During the twenty-nine years of the existence of the society it sold goods to the value of \$17,861,615, and the profits made were \$2,160,485.

A few incidental advantages are noteworthy:—a large library open every day; twelve news-rooms supported by the society, liberally supplied with newspapers and periodicals; the central news-room, furnished with such educational appliances as maps,

globes and telescopes, for the use of its members; night schools, lectures, and scientific classes, and instruction in languages, are maintained from the educational fund.

The town of Rochdale has about sixty-five thousand population, and five other co-operative stores. The total membership of the six is eleven thousand five hundred; the share capital held by them \$800,000. The sales in 1872 were in amount \$1,800,000, and the dividends on purchases \$193,000.

In addition to the above, they have a corn mill, which supplies distribution stores at cost prices, employing a capital of \$355,000, and making sales to the amount of \$1,250,000 per annum. The Rochdale Manufacturing Company, with a capital of \$330,000, did a business in 1874 nearly equal to \$1,000,000.

At the Halifax Co-operative Congress in 1874, Mr. Edward Owen Greening, estimated the annual business of their societies, including Scotland, England and Wales, at \$100,000,000; and, estimating the returns on purchases to average 10 per cent., it resulted in an annual saving to the *purchasers* of \$10,000,000. He also estimates at least an equal saving to the consumers in the freedom from the adulteration of food.

Rochdale having been a sort of starting point for co-operation, the system seems to have diffused itself through that great manufacturing region, in a remarkable manner. Lancashire county has a population of about two million eight hundred thousand, and in 1873, there were one hundred and sixty-seven societies in that county, with a membership of nearly one hundred thousand; assets \$9,000,000; share capital more than \$7,000,000; sales of goods exceeded \$21,000,000, and profits more than \$1,500,000.

Oldham in Lancashire county, has a population of one hundred and thirteen thousand, mostly made up of those engaged in weaving, spinning, &c. This town remarkably illustrates co-operation. It has forty mills, with a nominal capital of \$8,000,000. It is said that nearly all the mill owners have risen from being workmen. The town has three co-operative associations, with fourteen stores, and a membership of five thousand six hundred, and a share capital of \$700,000. Sales of goods in 1872, amounted to \$1,500,000, on which there was a divisible profit of \$173,000. \$4,000 was devoted to educational purposes. Fourteen news-

rooms and two flourishing libraries were maintained; also a corn mill to supply the stores at cost, employing \$160,000 capital.

So far as England is concerned we will describe one more, and that an irregular co-operative enterprise, under the name of "The Civil Service Supply Association," of London. The system upon which it was established is unlike any we have spoken of, and only dates back to 1865.

It was started by some post office employees, who conceived the plan under the alleged necessity of enhancing resources, not obtainable from their employer. Their prospectus reads as follows: "This association has been formed for the purpose of supplying officers of the post office and their friends with articles of all kinds, both for domestic consumption and general use, at the lowest wholesale prices."

A price list of articles accompanied the above, but it must have been very brief at the outset, for the first venture was a half chest of tea. This was soon followed with coffee and groceries of all sorts. The growth of the enterprise was so rapid that at the end of the first year they had moved the third time into a building, the rent of which was \$2,000 a year.

The latest record of the association, 1875, informs us that it was then occupying premises and buildings which rent for \$11,000. Four hundred persons were employed by it, whose united salaries and wages amount to \$240,000. The membership was over four thousand, each of whom held one share of \$5 value, which is not transferable, but at the death of the holder the share is cancelled, and the deposit returned to his family.

The aim seemed to be to about equalize the profits and expenses, but the excess of profits, with the annual receipts from subscribers, had in 1872 accumulated a fund amounting to \$365,000. The line of trade embraced groceries, tobacco, wine and spirits, hosiery and drapery, stationery, books, music and jewelry. In 1872 the sales amounted to \$3,500,000. The cost of conducting this enormous business was about 7 per cent. on the sales.

The entire assets of the association at the end of 1872, were about \$600,000. Below we furnish the yearly sales to June, 1873:

1865	\$25,000	1870	\$2,235,000
1866	105,000	1871	3,230,000
1867	415,000	1872	3,615,000
1868	1,090,000	1873 *	1,960,000
1869	1,725,000		

The limited number of subscribers, fifteen thousand, was attained in 1873. Each member has a right to introduce a stated number of friends as subscribers, who are required to pay \$1.25 annually for the privilege of trading with the society and receiving goods at its low rates.

The concluding record is, that during the nine years in which business to the amount of \$12,000,000 was transacted, not a single case of dishonesty was revealed.

It must be admitted that these and other authentic records of co-operative movements abroad impart additional interest and emphasis to the system. As we are able to do so from reliable data, we will extend these researches to the continent.

Mr. Schiltze Delitzsch is entitled to the credit of establishing the *People's Banks* in Germany to promote the social elevation of the working classes.

The industries of Germany are carried on generally upon a much smaller scale than they are either in this country or in Great Britain. Instead of immense mills and a proportionate number of hands under one firm or individual, we find scattered over Germany a multitude of small proprietors conducting business with a few hands and a small amount of materials, commensurate with the means at hand. Of course the small producers are subjected to a very unequal competition with the more wealthy, and it was to meet this condition of things, that Mr. Delitzsch conceived his bank project, which he thus refers to: "Capital could be created for the classes without capital and the merely passive, and depositing in public savings banks give place to the active participation in a bank business, established to supply the credit wants of its members; who, by fulfilling, under difficulties and deprivations, the engagements they had undertaken towards the societies, could prove their moral worth; while by the accumulations of small savings they succeeded in adding *power of credit to worthiness.*"

*First six months.

The utility and success of these banks is largely traceable to the manageable size and restricted limits of their operations. The managers were familiar with the responsibility of the borrowers, thus greatly diminishing the likelihood of losses. It is not unusual for those engaged in the same branch of business to club together, as we would say, and unite in a loan for the purchase of materials on joint account.

These banks were so prudently managed and became so useful in their sphere, that they gained a stronghold upon public confidence, and subsequently exerted a strong influence in the adoption of other forms of co-operation. It was in 1853 that this popular system of banking was established. The war which broke out in 1870, was a severe test of the stability of these institutions, but they all survived the ordeal, and at the conclusion of the war, it was found the number had increased and additional stores and manufactories had sprung into existence, until Mr. Delitzsch could report in 1872 the number of each to be as follows:

Credit banks.....	2,059
Trade associations.....	404
Distribution stores.....	827

And the amount of business—

Total	\$300,000,000
Cash credits.....	285,000,000
Capital belonging to members.....	21,500,000
Loan capital.....	62,750,000
Total number of members.....	1,200,000

In *Bavaria*, twenty-one new distribution stores were organized in 1873. In *Wurtemberg* and *Baden*, the number is increasing.

Freiburg has one, with seven hundred and twenty-eight members. In 1873 its sales amounted to \$100,000.

In *Stuttgart*, there is one with twenty-three hundred members, and eight branches. In 1873 their sales amounted to \$216,000.

In *Norway*, *Switzerland*, *Saxony*, *Holland* and *Italy*, distributive societies are rapidly increasing, and the value of the system throughout conceded.

We do not think our extended recitals of illustrated co-operation unduly magnify its importance. It was intimated at the outset that our investigations of this subject would necessarily involve protracted research into foreign methods.

It must be regarded as an advantage to us, that the elucidation of many modern theories and problems bearing upon the interests of labor and kindred subjects, have been brought out for us on the other side of the Atlantic. Is it not fair to assume that any reforms and innovations in social science which have gained a footing in England especially, have more or less adaptability to our wants, and hence may be safely imported, and, wherein discovered to be defective for American purposes, remodeled and ingrafted upon our system?

We hope to show that at least distributive co-operation, which has been notably successful in England, has achieved a good degree of success in this country. In the American citations we shall have occasion to mingle failures with success, but not to the detriment of the system, for it will form no exception to universal experience of failures and success in most enterprises.

The co-operative movement has extended to *Ohio*, and we find a few experiments there worthy of notice.

In 1867, a few iron moulders who had previously been engaged in a protracted strike, resolved upon an experiment in a union-foundry. Eleven of the number raised \$8,250 capital, each contributing \$750. This illustration was more theoretical than practical co-operation in its ultimate results. It was a prolonged struggle against adverse circumstances, and for five months the workers refrained from drawing any portion of their earnings, and then only one-half.

In 1869, the association agreed to introduce the genuine co-operative principle, but it was soon departed from. New members were taken into the organization until the number was increased to twenty-seven, and the capital stock amounted to \$40,000. In 1873, the capital had grown to \$60,000, and in 1877, \$100,000. Like many of its predecessors in other localities, it became over-loaded with capital, and from that period it was gradually merged into a non-co-operative enterprise. By its constitution the capital absorbed twelve per cent. of their first

dividend, leaving the excess for labor. This proved to be the only dividend earned and distributed to the overpowered and frustrated wage-laborers. Henceforth capital absorbed and conducted the business upon the old joint-stock plan. The perversion of the original purpose of these moulders, was due chiefly to the absence of any law in Ohio securing to co-operators, who desired such protection, the principle that "stock shall vote and not money." As the business thrived, the temptation for capital to engross it was overpowering, and three or four of the well-to-do stockholders became sole proprietors.

This is not the only case of the kind we have met with, and we will embrace this opportunity to say that State authorities can greatly promote co-operation by appropriate legislation, as has been done in England, Massachusetts and Ohio.

There have been quite a number of associations in Ohio for manufacturing, but the co-operative feature did not survive long, and for want of capital and other causes, most of them expired.

The distributive societies met with much better success in Ohio, as they have invariably elsewhere. We will only give details of a few, mostly established under the Eastern "Sovereigns of Industry."

The one at *Akron* was upon a small scale but in all respects satisfactory.

The last quarterly report of the *Letonia* store, says, "the profits for the quarter, after paying interest on capital and all other expenses, is 4 per cent. on purchases.

That at *Norwalk*, has thirty-seven stockholders of whom seven are women. On the amount of goods sold to January 1, 1877, (nine months) a dividend or bonus of 5 per cent. was returned to purchasers. Cash sales from May 1, 1876, to September 1, 1877, amounted to \$19,468.96.

The *Salem* association sold in one year \$18,663.00. The President's report says, "the year's profits equal 5 3-10 per cent. on the year's sales; the profits for the year equal 98 8-10 per cent. on the capital invested. Capital turned about eighteen times during the year; not a dollar's worth of goods sold during the year on credit. The President continues, "In view of the material and manifold advantages and power so easily and speedily attain-

able by the industrial classes through co-operation, it seems strange that the application of this principle is not the rule instead of the exception in this country."

The *Cleveland* store started in 1876, with a paid up capital of \$1,851.75. July 22d, 1876, its first report represents the sales to be \$15,136.55, and a net profit of \$581.46. The second quarter reports sales \$15,445.12, profits \$390.97. The quarter ending March 31st, 1877, shows a capital of \$2,559.94, sales \$15,485.04; net profits \$469.15. In November 1877, the store closed.

The report of the *Ohio Labor Bureau* says, in reference to this suspension: "This store did the largest business, and was apparently the most successful of any of the efforts made in that direction; and its absolute failure at the end of nineteen months, after having done a business of nearly \$100,000, and made profits on sales of at least \$10,000, induced an inquiry into the cause of the failure. The report only shows that the association had departed from the first principles of co-operation, 'pay as you go.'"

One of its earnest supporters says, "A man cannot do successfully a business requiring \$25,000 on \$1,500. We had to go in debt more or less on stock in trade, and I do not suppose that at any time from the first we owed less than the amount of our paid up capital. Our expenses were too large. Co-operation has one great danger, one ever present drawback, *i. e.*, too many masters, too many plans, too many people, who, from the fact of their little investments, feel privileged to investigate, to advise, and to object."

The report for 1877 of the Massachusetts Bureau of Labor Statistics, has a very comprehensive chapter upon co-operation in that State, and we will take the liberty of rehearsing the main points of interest, and glean from other sources what we can pertaining to other States.

A considerable part of the chapter is devoted to what was, in 1845, called the "*Workingmens' Protective Union*," which grew out of the agitation of the labor question.

A store was started in Boston under the auspices of this union, which will recall by analogy the "Toad Lane" enterprise, which, it will be remembered, started with \$7 worth of flour, sugar, oatmeal and butter. The Boston store started with a box

of soap and a half chest of tea, "from which small beginning grew an enterprise that, in its best days, traded from \$1,000,000 to \$2,000,000 annually."

In 1845 the name of this organization was changed to the "*New England Protective Union*," and it was duly equipped with officers connected with preceding labor movements. The first report of the association contained the following:

"The Board of Commerce, having been appointed a Special Committee, to whom was referred the subject of the difference between the wholesale and retail prices of teas, coffees and soap, have investigated the subject, and ask leave to make the following report: which is, in substance, on teas, from twenty-two to one hundred and forty-one per cent; coffees, fourteen to eighty-eight; soaps seventy-seven to one hundred and twenty-eight."

It can scarcely be wondered at that wage-laborers were restive under such extortion.

In 1847 it was determined to organize divisions in other sections of New England, and establish branch stores in each, to be supplied from the Central Division in Boston. Twelve were soon opened and stocked with goods, one of which was under the management of ladies in Lowell. At the quarterly session in October, 1847, twenty-five divisions were represented, with a reported membership of nineteen hundred and ninety-three.

In January, 1848, a resolution was passed recommending divisions to adopt the cash system, but it is feared this invaluable rule was not strictly adhered to. In April, 1849, it was "resolved that a committee be appointed to carry out that part of the constitution that referred to the organization of industry."

The committee on trade was instructed to provide a depot for the deposit and exchange of produce and goods, believing that a trading department alone would fail in accomplishing one-half of the objects of their association. This produce exchange seems to have been supported by a system of commissions, both for purchasing goods, selling and exchanging produce, and three per cent. per capita was made by each member of the subordinate divisions to meet the expenses of the central division.

In July, 1850, the store was found inadequate to the increased business. The report at this quarterly meeting contains the following:

“The subject of distributing the products of labor has occupied the minds of many philanthropists in this country and in Europe, but no system has as yet been satisfactorily tested which would prevent capital from exercising the sole control over the products of industry, and exacting the largest share for merely permitting the exchange of products, by taking advantage of short crops to enhance prices beyond the reach of the mass of the day laborers, and causing privations and starvations by filling store-houses with the necessaries of life, to be held for higher prices, and which often rot, or are otherwise injured, while the people are suffering for the want of them. Your committee believe that the system adopted by the union of distributing goods on the cost principle—that is, adding to the original cost just sufficient to cover all expenses, to be correct, and that by the steady co-operation of the divisions in concentrating the funds in one agency, the foundation will be laid for a better and more equitable system of commerce, which will secure to the laborer the products of his industry.”

The total amount of sales for three years by the central store are thus stated by quarters preceding the dates:

1848—Jan. 1.....	\$18,748 77	1849—Oct. 1.....	\$69,851 22
April 1.....	24,359 02	1850—Jan. 1.....	102,353 53
July 1.....	33,000 00	April 1.....	126,301 92
Oct. 1.....	36,400 00	July 1.....	150,831 30
1849—Jan. 1.....	40,910 24	Oct. 1.....	155,851 81
April 1.....	49,601 14	1851—Jan. 1.....	180,026 47
July 1.....	60,439 00		

We find at the close of the year 1850, there were one hundred and six divisions, eighty-three of which returned a membership of five thousand one hundred and nine, and eighty-four a capital of \$71,890.36. It will be noticed that the capital of these stores was small, the highest being \$2,765.51, the lowest \$150, an average of \$855.63. It appears too, that less than half the purchases of the divisions were made at the central store. The amount of sales for seventy-three divisions for the year ending December 31, 1849, was \$638,636.74, an average of \$8,748.44.

We must omit much regarding these divisions that is of interest. The one at New Bedford seems to have been the most successful, and it is still in existence. No. 16, at Lowell, sold a some-

what less amount of goods, viz., \$39,918.90. One, with a capital of \$808, sold goods to the amount of \$32,333.00, thus turning the capital forty times in one year.

In April, 1852, there were evidences of dissatisfaction in some quarters, and quite a number of failures occurred among the divisions, from incompetency of those in charge. The purchasing agent rendered himself obnoxious to his employers, and the bond of union seemed to be losing its influence with the brotherhood.

The divisions had increased from one hundred and six to four hundred and three, and the total sales were reported in October, 1852, at \$1,696,825.46.

The *Journal* of the union says, "By taking a cursory view of the past, we find that the chief reason of the failure of some of our division stores is the incompetency of the persons having charge of them; by this it should not be understood that many have proved losing concerns, far from it; most of them have been, and are, in successful operation." In 1856, the *Journal* says again, "If this organization takes deep root in the moral and social structure, drawing life and strength from the immutable principles of universal and impartial justice, it will become a vital, living spirit, and do much, not only to mitigate present wrongs and privations, but also render important service to the cause of man's permanent social, moral and political elevation. On the other hand, if narrowed down to the mere idea of present saving, reduced from its high purposes by the spirit of speculation, or the croaking of pretended but false friends, it will become merged into the present commercial Babylon, and gradually die out, leaving an inglorious record of the infidelity of its advocates to truth and duty." The prediction of this concluding paragraph proved true. The following appeared in the *Journal* in September, 1857: "The management of union stores, we regret to say, has not always fallen into competent and judicious hands, a circumstance not unheard of in connection with all human enterprises; and in consequence thereof distrust, dissensions, embarrassments, adoption of the credit system, and finally selling out and closing up, have followed."

The "American Protective Union" was a branch of the New England Protective Union. From 1853 to 1859, the agent of

this Union reports that \$9,258,376.36 of goods were sold. Not to enter further into details of this Union, we will state that its downfall was not unlike that of the New England Union. Many divisions had given up all distinctive features; meetings were omitted; credit was given and taken; shares were held in fewer hands, and the usefulness of the organization ended.

It is thought that the War of the Rebellion had much to do in hastening the demise of their organization. The farmer-shareholders were especially frightened and sold out to the storekeepers.

The most recent attempt at co-operation in New England is that of the "*Sovereigns of Industry*," which assumed an organized form in Springfield in 1874. The preamble to the constitution embraces the following: "Therefore, knowing that in society as well as in nature, the organized forces and elements appropriate and control the incoherent ones, that power is not only wielded but also engendered by union and co-operative exertion, we institute the order of the Sovereigns of Industry, for the purpose of overthrowing these evils, elevating the character, improving the condition, and, as far as possible, perfecting the happiness of the laboring classes of every calling. * * * By all the wise and kindly measures it can command, it will present organized resistance to the organized encroachments of the monopolies and other evils of the existing industrial and commercial system."

The State Council was organized in Worcester, in April, 1874. Thirty-three councils were represented by fifty-nine delegates. At the second session there were fifty-seven councils, with a membership of three thousand five hundred and sixty-four.

At the session held in July, 1875, one hundred and fifty-three councils had been organized, and twelve thousand and seventy-seven members reported. Forty-eight stores of various kinds had been started. At the next session that year, one hundred and sixty-six councils were reported, with a membership of twenty thousand. Both the councils and membership diminished—the former to ninety-eight, the latter to ten thousand—in 1877, when there were twenty-nine stores with a limited capital of \$35,316, doing a monthly business of \$49,806. There were other stores whose reports were not in. No uniform system of

doing business appears to prevail, and we cannot occupy space to describe them in detail. As a rule, the sales are made at a margin above cost to meet expenses; no dividends are expected. 7 per cent. interest is added to the items of cost.

In addition to stores under the management of the Sovereigns of Industry, there are many other associations of an independent character, both for production and distribution. Thirty-three of this description, doing business under charters, failed to report to the secretary, have a total capital of \$88,000. Another table containing thirty, about half of which are for production, show an aggregate capital of \$175,360. Of the latter number we will refer to several which were notably successful. The Natick Union Store was chartered in December, 1866, with two hundred shares of \$10 each. Not permitted to own real estate, a room was rented. The purchases and sales were strictly for cash, and low prices the rule, with 5 per cent. discount to stockholders. In two years the capital was doubled, and instead of paying it in cash, each holder of \$10 shares, received another of like sum. In January, 1872, a cash dividend of \$4,000 was paid. In 1874, \$2,000 was paid in dividends. In 1875, \$2,000 was added to the capital by dividends. In 1876, a dividend of \$4 per share, making a total of \$39 to each share, and 6 per cent. as required by law. Total sales in 1876, \$20,000. Groceries, meat, vegetables, and fruits are the kind of goods dealt in. Credit, under no circumstances, granted or asked.

A Fitchburg correspondent writes thus of two failures in that town: "There were two union stores here previous to any attempt at co-operation, in which I was personally interested, and as far as I can learn, the cause of their death is the same in common with the death of another, viz.: lack of knowledge of the business, lack of interest in the business, and a failure to do the duties of managers by the managers. As far as I can learn, both efforts went out of existence with the taint of dishonesty resting on some of the managers.

The most successful case of co-operative production is thus described by a correspondent: "The Somerset Co-operative Foundry Company was organized October 18th, 1867. We lost money up to the 1st of January, 1869. Since then we have paid to stockholders in dividends, \$14,600, and added to our surplus

fund, \$30,800. Our stockholders number fifty-three, of whom twenty-nine work for the company. We pay no dividends to our customers."

"Wages paid are better by 25 per cent. than in any other shop in New England, and 50 per cent. better than the average. We did not take any stockholder at first, unless he took five shares. We have a good class of men, and the amount they put in has held them together. But if we had not made money, I do not think it would have been possible to have kept them together. We have had very little trouble, and only a few of the original stockholders have sold out. January 1st, 1876, we added to surplus fund, \$3,000; paid dividend of \$3,000 cash."

We could give many more details of success and failure, but enough have been epitomized to supply those who are specially interested in the subject with well attested data, to enable our readers to form something more than crude conceptions of co-operative ventures.

Researches thus far in this, and in what relates to other countries, lead to the conclusion that co-operation may be made vastly beneficial to any class who feel inclined to undertake it in any of the forms we have portrayed it. In our view, genuine co-operation organized for distribution—and production too, only in a diminished degree—have an assured success no less absolute than in any other partnership undertaking, wherever the conditions to the success in other commercial or industrial pursuits are available and enforceable. It is the absence of the conditions we refer to, viz., ability and inflexible honesty in those who manage the business, that numberless failures in Europe and in our own country, are ascribed.

The most grievous hindrance to the success of union stores thus far, has been the employment of incompetent, unfaithful and scheming managers and clerks—often men destitute of correct business habits, unfriendly to the principles and objects of the organizations, and given to trickery and craft. Stores under such management, will soon break away from the safeguards of the system, gradually run into the old channels of trade and the adoption of the credit system, with all their uncer-

tain and ruinous consequences, and finally "blow up," as they ought, being nothing but shams.

The Massachusetts Bureau in its "conclusions," says, "The failure of these experiments is not so much due to methods as to men. The men are masters of method. When it is said that a store failed because it allowed credit, it only half states the fact. Who allowed credit? Not the storekeeper. He was the servant, subject to the majority. It was a failure to co-operate; for co-operation needs an intelligence equal to the settlement of such a question."

"If the management is charged with dishonesty or insufficiency, the co-operators are also responsible. The judgment necessary to select the proper man is the first essential of co-operative success. * * The mistake most frequently made, is, that the failure of co-operative stores is almost wholly due to financial causes; while there is absolutely no chance of failure for such reasons. That a store calling itself co-operative may so fail, is true; but a *purely* co-operative store, never."

Co-operation among working people, will achieve its greatest successes in communities which abound in skilled labor and advanced artisans, where there is supposed to be most intelligence, thrift, and a habitual disposition to acquiesce in the majority principle or the "greatest good to the greatest number" maxim. In comparison with some foreign countries, we are lamentably deficient in respect for law and authority. A prevalent indisposition in our country to comply with private and public restraints, strangely contrasts with what is observable in many foreign communities. *Co-operation means unity of action and enforced discipline.*

Thorold Rogers, Professor in the Oxford University, in an address delivered in England in 1875 at the Co-operative Congress, expresses some thoughts respecting co-operative requisites: "The second condition of successful co-operation is strict management, due subordination, and unhesitating obedience to orders. The discipline of a manufactory is as essential as the discipline of an army, and cannot be relaxed except with the gravest risk. It is plain that management and control should be intrusted to proper and accredited authority."

We quote also from an address delivered in Boston by the

Hon. Amasa Walker, upon the organization of co-operative enterprises:

"1. There must be, as I have intimated, a permanent capital; though it be, as we have supposed, a small one.

"2. As I have before insisted, no credit must be given. The association must neither take nor give credit; if it does, the result will prove unsatisfactory. *Cash down*, must be the motto.

"The *credit system* has ruined many associations, because it makes co-operation difficult and dangerous. *Credit is the workingman's greatest curse*. I say this deliberately and without reserve. By this I mean that he suffers more from the practice of taking credit upon what he consumes, than from anything else outside his own personal habits. A man may purchase a house on credit, if he will, because it is fixed capital. He does not consume it. He has it permanently on hand, and by the use of it is able to lay up a greater amount of his annual earnings; *but he should never take credit upon anything for daily consumption*.

"3. A profit must be charged upon all sales to meet necessary expenses; and it should be large enough to guarantee against all accidents; since, if there is more than sufficient for that purpose, the balance that may have accumulated at the end of the year can be divided among the stockholders, or added to the working capital. A margin should always be provided.

"4. Again, economy should be consulted in the choice of a room for the business, and in the help required to carry it on. This is one of the striking advantages of co-operation—nothing need be expended to entice custom. So that the location is central, and the room sufficiently large and convenient, it matters not whether it has plate-glass windows, frescoed ceilings or rose-wood counters. No matter how simple and inexpensive—the more so the better—for all saved in this way accrues to the profits of the associates.

"Associations often fail for want of economical management of their affairs. The great object being to save money, all unnecessary expense or waste must be carefully avoided.

"5. *Pure, unadulterated articles, alone, should be furnished*. This is an important object.

"6. And lastly, but not least in importance, the assistance of the fair sex."

There are some model business precepts embodied in the above, and we need not limit their application, by any means, to co-operation. We cannot give too much emphasis to the cash basis. It would be well if there were universal recognition and practical enforcement of the anti-credit system. It has been grievously, and too often disastrously ignored as a safeguard in business enterprises.

The co-operative movement has no doubt developed incidental advantages to the participators in it, not contemplated by its early promoters. When it is resorted to and conducted upon strict principles of rectitude by a body of homogeneous associates, bent on an equitable distribution of profits, it can be productive only of good.

St. Paul has furnished co-operators with an injunction, the general observance of which would greatly promote the success and formation of organizations to advance the material and social welfare of the labor classes: "Look not every man on his own things, but every man also on the things of others."

It is noticeable throughout that a large percentage of failures in co-operative experiments were owing to the absence in individual associates of those moral virtues which are indispensable to the apportionment of even-handed justice among "independent equals." The requisites of success in these collective partnerships relate less to material appliances than to the *moral qualities of those who direct and control the business*, and there ought to be no apprehension that the moral requirement of this new mode of transacting business will not be forthcoming.

If the co-operation principle, in any or all of its phases, ultimately commends itself to communities chiefly engaged in manufacturing pursuits as being worthy of substitution for old-time methods, there should be no lack of disposition to give it a fair and impartial trial. We have already said and illustrated that, as a problem, it is well nigh, if not wholly, solved in England and elsewhere, and it would be somewhat presumptuous for any one to assume that the conditions of like success may not be found here. If there is real merit in the system, we need to have it verified, and, pending the process, it would be unlike us

not to discover amendments. It would be unwise for us to indulge our freakish propensity, and rush into co-operation enterprises in advance of adequate proof of its value. *The revolutionary period is still upon us, and the present generation is no less likely to witness innovations and changes affecting social relations, and methods of achieving material progress, than the preceding one.*

We have referred to incidental advantages of co-operation. The simple receiving of dividends upon savings invested in these societies, and the profits on the consumers' purchases combined, do not represent all that is gainful to the participants. As soon as it is apparent that shareholders in these movements have a new avenue to profit opened to them, they will naturally begin to prepare themselves for admission to such privileges. Inasmuch as the benefits to accrue from these associations are so largely dependent upon the skill, aptitude and straightforward integrity possessed by the partners, the acquisition of these virtues will be of foremost importance. The co-operative feature has the effect of bringing out the collective capabilities of the associates, and should unite them in an impartial endeavor practically to exemplify the principles embodied in the organization. *The strength and success of co-operation lies emphatically in co-operation.* Some one in England has forcibly said that "the cure of the evils of co-operation is more co-operation."

We feel inclined to give more emphasis upon this occasion to *distributive* than to the other forms of co-operation, only because it is less intricate and more compatible with the general condition and circumstances of those who are in need of its benefits.

It is unquestionably true that co-operative stores rightly conducted, have a claim to be regarded as the true method of securing to the labor classes the necessaries of life of good wholesome quality, pure and simple, at prices attainable only under the cash system; and for self-protection, the distribution must be practically in the hands of the consumers, which of course implies co-operation. The pay-cash system can be maintained by wage-laborers just as easily as by any other body of consumers, under rigid economy and systematic training. And we feel equally sure that many of the trials and hardships, and much of the squalid destitution which rends the sympathetic heart the world over, is in a very large degree unnecessary and in no important sense traceable to the alleged injustice of employers.

All unbiased observers know full well, that the predominating causes of the destitution and misery in all lands arise from intemperance, improvidence and untrained habits of industry and economy. Substitute for these their opposites, with appropriate education superadded, and in our view the perplexing problem which is uppermost in the minds of the people will at least be half solved. Statistics to verify this assumption, if obtainable, would be overwhelming. Since, however, mathematical data are in the custody chiefly of the unwilling victims, we must rest upon theory. It is gratifying to know that those who are ordinarily exempt from this forlorn classification are Americans, and in the main whose industrial attainments and habits of life entitle them to the best of opportunities for self-elevation and social improvement; and who will maintain that the best interests of employers are not promoted by this class, of both skilled and unskilled employees?

While from the force of circumstances these deductions and exemplifications of co-operative movements in all lands are somewhat disjointed, we trust they will nevertheless serve their designed purpose, viz., to draw public attention to the subject, and predispose that class of our fellow-citizens whose earnings have been impaired, to avail themselves of those approved methods, (involving self-reliant and concerted action on their part) which we have endeavored to show have been successful elsewhere in supplementing limited resources. It is certainly a legitimate form of associative activity, beset with more or less difficulties, but clearly feasible and in its distributive character, devoid of intricacy. It introduces a system so at variance with long established mercantile habits, that prudence dictates small beginnings and slow advances, giving time for mature and healthful growth.

To our knowledge there has been but one attempt upon an extended scale at productive co-operation in New Jersey,* and that so long as it continued, was an exceedingly satisfactory exponent of the system. Indeed the most so of any that has come to our notice, certainly in this country, and we are sincerely sorry that its career was suspended just too soon to furnish for this occasion an existing crowning exemplification of industrial partnership.

*There have recently been started several co-operative stores in Newark and other places, but the have not become sufficiently established to furnish us with notable results.

Notwithstanding the discontinuance at the Millville Glass Works, after five years of the most accordant participation in the practical working of co-operation, we regard it as the most instructive example we have to present. It simply failed to satisfy the laboring participants at the unfortunate juncture when neither party could make money. During the five years of its existence, both parties derived satisfactory benefits from it. Never before did the concern turn out as good work, nor as good average products, and the remuneration to the men was considerably enhanced under the management, for they were allowed very liberal wages. The basis of the system was, first, the payment of 6 per cent. on the capital and ten per cent. on the sales, to the partners, and 5 per cent. addition to, or deduction from the wages of the men, conditioned on the prosperity of the year.

When the unwelcome industrial and commercial depression succeeded a long period of reasonable prosperity, Millville co-operation seemed to lack the quality of self-perpetuation. Diminished wages, consequent upon diminished profits in this instance, disinclined the workmen to take the risks of an indefinite suspension of business activity. The moment the bonus on labor under this system is jeopardized, the men become more or less distrustful of their employers. We have every reason to believe that this was not the case at Millville, but it was frequently the experience abroad. It is not an unnatural result perhaps, and may be expected to occur, until a greater familiarity with the system is acquired, and it becomes more generally adopted.

The corner stone of co-operation is almost of necessity, faith in employers, for they, being the owners of the capital, think they must in self-defence retain unmolested control in the general management of the business. The dependent co-operators have no reason to complain of this so long as their distrust is unfounded.

We feel assured that this predominating quality of capital need not always exist, since it is among the possibilities that the new system of partnership we are considering, will ultimately supplant prevailing causes of antagonism, and lead to a more harmonious and equitable association of capital and labor.

It cannot but be obvious to every thoughtful and benevolently inclined citizen, that what we need to re-establish prosperity for

all classes upon a permanent basis, is a spontaneous and practical elevation or leveling up of the masses and thereby diminish inequalities between the representatives of capital and labor. It will be conceded that this happy consummation is not to be speedily achieved, and never, without the consent and benign co-operation of those who occupy the plane to be surmounted. Is it not an achievement worthy of the highest consideration, and entitled to the moral support and furtherance of all whose influence is essential to the attainment of such a desirable object?

If the dissensions we are considering are perpetuated indefinitely, it will be through the culpability of both parties, though capital may very properly be appealed to, to restrain its dominant sway in the interest of humanity. And the discontented non-capitalist may with great propriety be reminded that there is no position in this country which is not accessible to whomsoever has the requisite skill, aptitude and education, to overcome the intervening obstacles to its attainment.

“Labor is both superior and prior to capital, and alone originally produces capital.”*

No laborer is exempt from the obligation to make the best use of his powers and opportunities for advancement. *Inequality of endowment can, in a very large degree, be neutralized by industry and studious habits.* Education and skill were acquirements within reach of multitudes who have regretfully led aimless and thoughtless lives, which a little ambition and forethought might have diverted to an honorable and successful career.

It must be acknowledged that our country is deficient in educational appliances exactly suited to the needs of the class now in mind, but this lack does not exonerate multitudes of young men who ought to aspire to useful industrial and mechanical pursuits, from the misimprovement of such opportunities as are within their reach for acquiring education and training, acquisitions which never fail to enhance the value of all services however they may be employed.

Ambitious youth will not wait for enlarged and improved educational facilities, but avail themselves of such as are at hand. Great proficiency in mental culture and skill are attainable through

* B. G. Northrop.

the unaided use of books, lectures, newspapers, &c. *The country is full of examples of successful manufacturers and merchants who have risen from the ranks, by dint of noble aspirations, coupled with studious educational habits, and innate social refinement. There are multitudes of bankers and other capitalists in our large cities who were penniless at their outset in life.*

All possessed of similar endowments do not meet with the same degree of success in their chosen pursuits, but attainments in business success and social elevation, are sure to ensue from intelligent industry, accompanied with a good degree of frugality and perseverance, and withal a Christian morality.

Now, since it is conceded that labor produces capital, is it not within the sphere of vast numbers of the laboring classes, in proportion to their natural endowments and acquisitions, to become capitalists, though often, it may be, in an humble degree. They certainly will succeed if they go about it in the right way. *SELF RELIANCE and SELF HELP are prerequisites which must come to them with the force of a new revelation. They must put forth redoubled energies; utilize their natural and acquired powers; observe habits of economy; abstain from excesses which absorb earnings to no good purpose, and aim to render themselves indispensable to their employers. Thus they may indulge in an assured hope of well-requited advancement in the scale of manliness and independence.*

It is believed to be legitimate for this Bureau to extend its investigations to the effect of the purchase and consumption of intoxicating liquors, upon the social and moral condition and welfare of the workingman and his family. Much might be said on this point, but we will only collate a few simple facts of obvious significance and unequivocal import, derived from the glass-blowing city of Millville, which furnishes the most comprehensive data for our purpose, that has come under our observation.

Thirty years ago, high wages prevailed among the employees connected with these glass-works, and it was the popular impression among them, that the exhaustive nature of their employment rendered the free use of alcoholic stimulants absolutely necessary to health. The hotels, saloons and grocery stores were the willing abettors of this enchanting theory.

Authentic account books reveal the extent of the liquor traf-

fic in that town, and the tearful abridgement it occasioned for legitimate purposes, of the weekly earnings of wage-labor. In some instances, it was discovered that one-third in amount of the store-bills, was for liquor. The average was found to be one-quarter or 25 per cent. The inevitable effect of this excessive diversion of earnings from imperative family needs, was suffering, burdensome debt and the extinction of manliness and self-respect. Moreover, we are informed by one who knows, that *one-sixth* of the time of the *glass-blowers* was lost from "sprees" and their effects.

The population of Millville twenty years ago was about five thousand. At that time two important industries were carried on in the vicinity, viz., the making of charcoal, and cutting hoop-poles, and this town was the centre of trade for those thus employed. The cotton and iron manufactures, subsequently introduced, brought a large accession of foreign consumers.

In those days, the wood choppers and charcoal burners came to town on Saturdays to get their weekly supplies of meat and whiskey, so that day became a sort of general mart-day for the entire population of the township. This circumstance rendered it comparatively easy to estimate the weekly sales of liquors in the hotels, saloons, and grocery stores. Competent authority makes the sum \$1,150, which gives the annual expenditure of \$59,800.

Subsequently, the moral condition of the people, through various civilizing and humanizing agencies, began to improve, and it was deemed advisable to lessen the number of licensed dealers. Not 'till 1866, however, when the city was incorporated, was any decided action taken towards checking the traffic in liquor. The vigorous action of the authorities, effectually put an end to the licensed sale of all kinds of liquor and beer, except in the hotels, and in 1872 the City Council refused to license any of the hotels, which policy has been continued to the present time.

It is estimated that \$1,000 will cover the cost of liquor consumed in the city of Millville last year, which is less than 5 per cent. of what was expended fifteen or twenty years ago, and it would practically be in disuse in that city to-day, were there no licensed agencies to sell in the bordering towns. We are informed that at the present time 90 per cent. of the male citizens

of Millville, above fifteen years of age, are wage-laborers. It is not practicable to furnish in figures the value of the savings in that community, resulting from voluntary or even involuntary abstinence from the use of intoxicating drinks. But the annals of Millville, with its unusual preponderance of the labor element, illustrates very forcibly the effects upon a large concentrated population, of practical emancipation from the evils of intemperance.

"Seeing is believing," but unaided by the over-mastering motive of self interest, convictions in respect to the evils of intemperance are seldom efficacious for good in any considerable degree. Millville is not the only conspicuous industrial community in Southern Jersey similarly liberated.

It is a disparaging aspect of temperance to limit its benefits to the mere saving of the yearly outlay for liquor. Its influence upon health and habits of industry, are far from being secondary. The bearings of temperance upon the momentous questions of pauperism and taxation are of surpassing importance to the labor classes. What a safeguard it furnishes to those who prize virtue, manliness and self-respect, all of which are jeopardized and inevitably supplanted by an enslaved appetite for liquor long indulged. The evidence is cumulative from observation and data derived from other communities to more than justify our reprobation of intemperance. Facts kindred to those already stated might be gleaned from Vineland, Clayton, Hammon-ton, &c.

It is not probable that intemperate men are much in the habit of figuring up what it costs them per annum for alcoholic drink, and we have thought that a simple statement showing how much larger the sum probably is than most men estimate it, it might possibly arrest the attention of some young men and deter them from allowing the habit to get the mastery over them.

Perhaps twenty-five cents a day is above the average cost to most laboring men who use liquor habitually, but we assume it to be not far out of the way, and it is a convenient basis for a calculation easily adjustable to any individual case. A daily expenditure of this sum for an entire year amounts to \$87.50, and for twenty years \$1,750.

Now we will show how much better off the workman would be, if, instead of spending this sum every year for liquor, he would place the same amount at interest, and let the yearly principal and interest accumulate for twenty years. If our calculation is correct, at the expiration of the twenty years, he would find himself to be a very *respectable capitalist*. His twenty-five cents daily saved, with compound interest superadded, has made him the happy possessor of \$3,926. And who will say that almost any industrious, economical, *temperate* man, unless he has a very large family, cannot lay aside twenty-five cents a day for such a purpose. Those graded above ordinary day laborers could double it, and at the age of forty might be classed among the "bloated bondholders." Whose fault will it be if they neglect to do it? Certainly not their employers, for this is precisely what they would be glad to have all their employees do, since it is universally true that the mental and physical capabilities of a temperate man render him, as a rule, more valuable to his employer, than one whose faculties have been impaired by liquor.

It can easily be shown that this expenditure of twenty-five cents a day for liquor by no means covers the whole cost of the indulgence. We have already said that at Millville, intemperance was the occasion of an average loss of time of one-sixth, or fifty days in the year. A common laborer receiving \$1 a day, can see clearly that in this way he nearly doubles the absolute cost of his drinking propensity, and this we will demonstrate.

Fifty days of lost time would of course amount to \$50, which, added to the above stated outgo of \$87.50 for drink, makes the loss every year \$137.50. Let us invest this sum each year also at compound interest as in the other case, and in *twenty years the total will be \$6,160, enough to erect a handsome block of houses for laborers' use*, or what would be better for the fortunate possessor, to become an independent employer in his favorite occupation. This is not fancy ciphering, but the result of a carefully worked out problem.

We are so thoroughly imbued with the conviction that the *liquor question to the laboring man at the present time, is paramount to all others*, that we have made the above calculations in the hope that their simple, self-evident teachings will make an im-

pression upon some casual reader, before it is too late to rescue him and his family from the direful consequences of inebriety. And yet this only illustrates the dollar and cent aspect of the case, which constitutes the smallest half of the benefits flowing from a life of sobriety and economy. An intelligent and thoughtful wife and daughter can more effectually portray the remaining good results flowing from the non-use of liquor by the husband and father than we can.

To our mind there is no more obvious truth for contemplation than that the *suppression of intemperance upon an extended scale, would do more to benefit the workingman and his family*, than any remedial devise—nay more than the aggregation of devises—which are being vociferously promulgated through the land, for the relief of the labor classes.

In furtherance of our aim to promote the prosperity and welfare of the industrial classes and those who are dependent upon them, we observe that accumulations of earnings judiciously invested in any community, are an index of no doubtful signification. It will scarcely be questioned that the following record of the Building and Loan Associations of Millville, point directly to the substitution of habits of self-denial and frugality, for every species of self-indulgence which absorbs so large a percentage of the products of wage-labor.

Five Building and Loan Associations have received and loaned in Millville township, \$394,000, all of which has already been returned except \$63,215, not yet due.

The Millville Stock Building Association has only been in operation four years, and as their loans are made for ten years, none of the capital has been returned. The capital stock of this association is \$50,000, of which \$30,000 is invested in new houses, and the balance is loaned on old real estate. Most of the loans are made to working men. The borrowers are in many cases holders of stock, upon which the profits are divided every three or six months.

These co-operative building associations, patterned after the Philadelphia model, have been a complete success in Millville. They are based on the power derived from the aggregation of small sums to produce great results. Thus five hundred men

pay in monthly \$1, on each of say one thousand shares, aggregating \$1,000 each month. This sum—sufficient to buy a moderate size house and lot in Millville—is then put up for sale amongst the stockholders at open auction, and on each share of stock \$200 can be borrowed. The successful bidder pays a premium ranging from 5, 10, 15, or even 20 per cent., *i. e.*, he receives \$200 for each share he owns and gives a mortgage on his house and lot for the nominal sum he borrows. This mortgage is only payable, however, when the stock is worth \$200 per share. The borrower then pays in addition to his \$1 per share per month the interest at 6 per cent. on the nominal sum he borrows. Thus A. B. owning a lot, borrows on five shares \$1,000, and receives that amount, less the premium of say 20 per cent., \$800; with this he builds his house. Each month he pays into the association \$1 per share, \$5, and interest at the rate of 6 per cent. per annum on the \$1,000, \$5, a total of \$10, which is no more than a fair rental of a house and lot worth \$1,000, and practically at the end of ten and a half years (the time of course varies with the premium paid for the money, from eight to twelve years) *he finds himself the proud owner in fee simple of house and lot, for but a trifle, if anything, over a rent.* The stimulus and incentive to save and economize is prodigious, and every betterment the man puts on his house and lot, *is all his own.*

Of the five associations referred to above, the “*Union*” closed up very successfully. The “*Perpetual*” runs in series, two of which were closed with perfect success, and the *third* to the *tenth* are now running.

“What can be done by building associations when properly managed, was demonstrated in the case of the Columbia Association of Reading, which wound up its affairs recently. It was in business for a period of nine years, and during that time had in its control about \$150,000; the annual cost of manipulating this large sum was not more than \$150. The shareholders numbered three hundred and fifty, and the shares one thousand two hundred and sixty-five. The par value of the shares was \$100, and during the existence of the organization, \$115 were paid into the association. At the winding up, each share was paid off at the rate of \$180 per share, being at the rate of 12 per cent. per annum on the money invested. This shows how

profitable these corporations are to the shareholders, and when we further consider the aid and assistance they give to men in their efforts to secure homes for themselves, their influence on the general prosperity of the community in which they are situated is almost beyond calculation. Philadelphia is an evidence of the great good these associations accomplish, and there's no denying this."

M. Feugureau thinks "co-operative societies are destined to go on extending until the day, too remote but certain, when in the world of industry there shall be none but co-operation," and *Thornton* is not ashamed to share in such anticipations. He says, "it seems to me impossible that the day should not come when almost all productive industry, and most of all other industry, will be in the one sense or other co-operative; when the bulk of the employed will be their own employers."

The social and economical transformations which are beginning to modify the character and enhance the prosperity of the people, and the causes that have accelerated or retarded such advancement, may well continue to engage the attention of publicists and scientists. Reconstructive anticipations are not restricted to thoughtful men in France and England. All nationalities are represented among those who prophesy good and evil in social and industrial spheres, as well as those which relate to other problems. To quote from *Feugureau*, *Thornton*, and others who study political and social economy, does not magnify or necessarily sanction what they utter, only so far as their sentiments are in unison with the previously matured convictions of their readers.

The times are fraught with subjects demanding thoughtfulness, and no one who neglects to employ his best efforts in discovering remedies for existing evils, is exempt from grave responsibility.

When we say that modern corporations wield in great part powers formerly centred in the State, and that capital has acquired the knack of self-protection in such a sense and in such a degree as not to be invariably in harmony with strict justice to public and private interests other than those closely indentified with the capitalist, we simply put into words thoughts which are uppermost in the minds of a vast multi-

tude who are totally helpless to resist or shield themselves from the evil consequences of such an exercise of acquired powers. It seems to us that this tendency to concentration of capital and power has an imperative claim upon public regard, and upon our best inventive faculties to discover an equitable method for the distribution of the great wealth which machinery, science, labor and capital conjointly create. The problem is one of infinite magnitude, and the basis perhaps of more that relates to the future welfare of the nation, and the happiness and contentment of the people, than we are accustomed to think.

The affirmative view of co-operation as the crowning solution of the capital and labor problem, taken by Messrs. Feugureau and Thornton, will not be a foreboding surprise but to those who have refrained from thoughtful and candid inquiries into the subject. It has certainly assumed a prominence abroad in the field of humane investigation, and has already awakened sufficient interest and scrutiny in our own country, not only to justify but invoke continued statistical and inductive research, either to verify or annul its adaptability to the present exigency.

When great industrial and social changes are pending in all lands, and the combined wisdom of nations is intent upon discovering new methods and systems designed for the amelioration and elevation of the masses, who can be excused for holding themselves aloof from practical participation in such humane endeavors, or do otherwise than encourage the adoption of devices, from whatever source they emanate, which betoken good to mankind?

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CHAPTER V.

SAVINGS BANKS.

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CHAPTER V.

SAVINGS BANKS.

Having but a half year in which to exercise the functions of our office before, in obedience to a State law, we were obliged to give the result of that brief period of labor to the public in the form of a report, the task of determining what subjects could most appropriately occupy our attention and furnish the most satisfactory results in view of the limited time at command, was in no small degree embarrassing.

Our minds were settled in the conviction that it was an obvious duty, to devote attention first to concerns directly serviceable as far as possible to the interests of labor and the laborer, hence we readily formulated the schedules which occupy the opening chapter of this report.

That this primal expenditure of effort was so unproductive of results aimed to be accomplished in that line of investigation, does not detract from the sincerity of our purpose to obtain information of prime importance from both employers and employees, to form a sort of basis for what might subsequently follow in the department of statistical knowledge.

After completing the schedules which relate chiefly to occupations, earnings, savings, cost of living, etc., we concluded that savings bank returns would very appropriately have a secondary place in our regards, we therefore adopted the Massachusetts forms and placed them at an early day in all the savings institutions of the State.

A few general observations regarding the origin and mode of conducting savings banks will very properly precede the presentation of the tables we have prepared as the product of our bank schedules.

Public records of savings banks disclose the earliest organiza-

tions to have taken place in Switzerland, in the cities of Berne, Geneva and Basle, about the years 1787 to 1792. Keyes, in his history of savings banks, informs us that Jeremy Bentham, in 1787, put forth the idea of "frugal banks" under the auspices of the government in behalf of the poor, but it was not favorably received by Parliament. In 1806 another bill was introduced in Parliament for a similar purpose, which likewise failed. It was reserved for private benevolence in the person of Mrs. Wakefield, of Tottenham, in 1801, to initiate a typical savings institution, the original patrons of which were limited to women and children. It is represented that Dr. Henry Duncan, of Scotland, organized the first successful savings bank in his own parish in 1810, which entitles him to be regarded as the father of the system.

These small beginnings reflected the incipient idea of encouraging frugality and economy, together with the husbanding of small earnings of the laboring classes, and they have expanded into a multitude of beneficent institutions, penetrating every civilized community in the world. The London Savings Bank was established in 1816, and two years subsequent to that, one was started in Paris. After the English Government recognized the importance of these wisest of all public benefits designed to encourage habits of economy among all classes of artisans and laborers, and assumed by act of Parliament to regulate and control them, they increased very rapidly in that country. In 1849 the sum total of deposits in Great Britain was \$150,000,000.

Our own country was not far behind England in beneficent regards for the welfare of the industrial classes. Massachusetts, New York and Pennsylvania preceded New Jersey in savings institutions. The first organized in this State was in Jersey City, February 27th, 1839, and took the name of the first one organized in Massachusetts in 1816, viz., the "Provident Institution for Savings."

Until within the last few years the published exhibits of savings banks were regarded as fairly representing the condition of the labor classes, for primarily their financial interests were assumed to be blended in a very large degree with those institutions. But within the last five or six years it is observed that the well-to-do class have been attracted to these depositaries with their unproductive possessions, until they have ceased to reflect

in the aggregate, the savings of the classes they were originally intended to benefit. It is alleged, however, that in New York, since the reduction a year or so ago of the maximum interest allowed on savings bank deposits from 6 to 5 per cent., there has been a great diminution both in the number and amount of deposits from capitalist sources. This may be regarded as a favorable augury for savings institutions.

The number of savings banks existing in a community or State, furnish no reliable evidence of the prosperous condition of the classes who are expected to sustain them. Since unemployed capital has been allured to such an extent into these institutions by the liberal interest paid on deposits, large deposits are by no means regarded as auspicious indications, for they are only temporarily in custody. This class of deposits were not contemplated at the outset, and because of their transitory character they are more nearly a disadvantage in the aggregate, than an advantage. They tend to augment both the risk and the current expenses of doing business.

We have not the data at hand to maintain the assumption, but we believe that a very large proportion of the savings institutions which have failed recently throughout the country, could very properly have been classified as *supernumeraries* in the sense that they were trespassers upon ground already well and amply occupied. It must be understood that these remarks have a general and not specially local application.

Recent experience in respect to savings institutions all over our country, admonish the public of the need of most vigorous scrutiny into the official acts of those associated with them. We do not limit this monition to those who simply conduct the daily operations of the institutions, having in mind as well the trustees and directors of all public monetary agencies, but emphatically those which are the custodians of the earnings of wage-labor, embracing in numerous instances those, too, who have become disabled from any cause, together with widows and orphans without number. It is impossible to unduly magnify the sacredness of trusts of this nature. *The position of a trustee in a savings bank has scarcely a parallel in its relations to a worthy and comparatively helpless class.*

Amid the recent series of defaults and collapses of corporations

and savings banks, it has been too often observed, and with extreme sorrow, that boards of directors and trustees, composed of men of the highest respectability and probity, have, for the first time perhaps, committed sins of omission of the greatest magnitude, simply by *inattention to an imperative duty*. If they have not passively acquiesced in the wrong doing on the part of *their* treasurer or secretary, they have omitted, with inexcusable culpability, to ascertain whether officers of their own creating were faithful to their trusts. The plea that they were not required for responsibilities voluntarily assumed, entitles them to no abatement of culpability, for they accepted the positions knowing in advance they were to receive no recompence.

In the light of past experience it behooves public authorities, and all thoughtful and intelligent citizens, to exercise vigilant supervision over all classes of institutions which are in any degree amenable to such supervision. If our country is about to pass from an unprosperous to a season of restored industrial prosperity, there is nothing more compatible with such a desirable consummation, and obviously conducive to its realization and permanency, than solvent and wisely-conducted monetary institutions.

All who are identified with and relatively responsible for the administration of these and kindred public trusts, should be reminded that their constancy and fidelity will be more closely scrutinized in the future than has been observable in the past.

Recent revelations teach us that while lives of established rectitude are serviceable in the choice of officials, they no longer render it unnecessary, or exempt such incumbents from inquisitive research into their official deportment.

We had in our State until quite recently forty-six savings institutions. Within a brief period eight of the above number have come under judicial proceedings, and their future destiny is in the custody of the Chancellor.

The remaining thirty-eight are believed to be entitled to public confidence, and to have an average standing, equivalent to that of the same number of similar institutions, located in any other State.

Until the passage of the general law concerning savings banks, approved April 21st, 1876, all of our savings institutions

were doing business under special charters. But one bank has gone into operation under the general act, and the impression seems to be that the ground is so well occupied throughout the State, there will be no occasion for some years, to increase the present total.

The general law, with a supplementary act approved March 8th, 1877, and two additional supplements, both approved April 5th, 1878, bring all the savings banks of this State under the control and supervision of the general law.

One of the supplements of 1878 has special reference to "the better security of depositors in savings banks." The second section of this supplement determines the conditions upon which temporary loans may be made. We should regard the collaterals indicated therein as unexceptionable, if the words "*or other corporations of this State*" were expunged.

The third section contains stringent provisions respecting violations of the law by "any trustees, directors, managers or other officers of any savings bank or savings institution now existing within this State."

The fourth section provides that banks organized under this general law shall allow interest, not to exceed 5 per cent.; and the last supplement relates to chancery proceedings in respect to insolvent institutions.

According to the last annual statement of the Secretary of State, *our thirty-eight banks have \$18,950,490 of deposits and surplus earnings.* It was our desire to ascertain what proportion of this total belonged to the *labor classes.* The inquiry is certainly one which cannot fail to awaken a new interest in the general subject of surplus earnings of the industrial classes. We have to express great disappointment that more than half of the banks omitted to respond to our tally-books, and moreover, those that have, either misunderstood instruction No. 4, or for some other unexplained reason, omitted to give us the most important information contemplated by those blanks, consequently the table we have prepared, and which otherwise would have identified in detail the occupations with the deposits, will come very far short of our expectations, and in place of it, we can only substitute the number and amount of the total deposits to the credit of each of the four classifications.

If we have been deprived of this exceedingly interesting presentation from a misinterpretation of instructions, it is the occasion of two-fold regret. We knew, of course, that this classification of occupations would impose for three months a new daily duty upon the officials, of the nature of an enquiry to learn the occupation of each depositor, but felt assured that the significance of the inquiry would command momentary approbation, and that if the super-added service were generally acquiesced in, the result obtained would determine a very interesting question in reference to the *source of savings bank deposits*.

But since we have failed to obtain the classified occupations in detail, it remains for us to furnish the total number of deposits of each of the four classes, with the total amount of deposits and the average of each.

Table No. 1 shows the total number of depositors for the three months to be two thousand and thirty-two, and the total amount of deposits \$305,314.35. It will be observed that the largest percentage of depositors belong to Class No. 1, which represent wage-laborers, being nearly one-half or 47 per cent. of the number, and 41.5 per cent. of the amount.

Class No. 3, which represents professional men, is the smallest, being 4 per cent. of the number, and 31 per cent of the amount.

Class No. 4 embraces those whose dependence is upon the "use or interest of money," is 36 per cent. of the number of depositors which is less than wage-laborers, and 45.6 per cent. of the amount, which *exceeds the wage-laborers*.

Table No. 2 shows the number and amount of deposits in each bank in 1877 and 1878, with the increase and decrease of each. The decrease in the number of depositors is one thousand and seventy-three, or 3.36 per cent. and the decrease in the amount of deposits is \$462,813.42, or 4.50 per cent.

Two banks neglect to give us the amount of new deposits in 1877, though they tell us the number of new depositors. The total of new deposits in eleven banks in 1877 is \$849,819.18, and new depositors is four thousand seven hundred and seventy-four, showing an average of \$178.01. Another presentation in this table shows that six thousand eight hundred and sixty-six depositors deposited \$755,226.53, the average being \$110.

Recapitulation of Table No. 2, embracing thirteen Banks, for one year ending January 1, 1878.

Per cent. of decrease in number of depositors.....	3.36
Per cent. of decrease in amount of deposits.....	4.50
Total number of depositors in 11 banks.....	4,774
Total number of deposits in 10 banks.....	6,866
Total amount deposited in 10 banks.....	\$755,226.53
Average number of deposits by each.....	1.43
Average amount deposited by each.....	\$178.01
Average amount of each deposit.....	110.00
Total amount of individual trust accounts in 10 banks.....	160,246.83
Total amount of societies' trust accounts in 10 banks.....	67,969.46

Upon the face of the few returns we are able to present respecting savings banks, there does not appear much to indicate that trades, capitalists and others not wage-laborers, have used our savings institutions to any very great extent. To be sure the practice can be carried on quite extensively through the use of fictitious names, trustees, &c., and the multiplication of accounts in sundry banks, and thus elude observation pending ordinary investigations. We know that in other States, more searching investigations have revealed clandestine systems of deposits by wealthy people, which have very materially augmented the sum total of deposits. In the absence of data pertaining to *withdrawals* of deposits, which, owing to the condition of industrial and commercial disturbances must have been very large and not unlikely may have exceeded the deposits, we can form no deductions respecting the decrease of deposits presented in table No. 2, that would be anything else than conjectural.

It must be conceded that our presentation of savings banks is extremely inadequate and unsatisfactory. We shall hope on some future occasion, in a similar endeavor, to have the unrestricted co-operation of those in custody of those institutions.

We are disposed to be a little pertinacious in our convictions in respect to the use of these institutions by other than the *wage-labor, or small-earnings class*. It is in their behalf that our interest in this subject has been awakened, for it is clearly discernible that men of surplus wealth who do not care to embark in actual business, have it in their power in a very large degree to monopolize through the instrumentality of excessive deposits, the advantages and profits of savings institutions,

by diverting these accumulations into this channel to such an extent, as to do great injustice to a class more obviously in need of the utmost security and remuneration derivable from these beneficial sources.

The earliest intimations in this country respecting the design of savings institutions, we extract from a petition that was presented to the "General Court, from the Town of Boston" in 1816, for the incorporation of the "Provident Institution for Savings:" "By which all classes of the community may be encouraged to the practice of frugality, and especially industrious mechanics, either journeymen or masters, seamen, laborers, and men of small capital, widows, and others, may receive from their savings of wages or profits, regularly deposited and systematically invested in public stocks or otherwise, a profit proportional to the success of the institution and prosperity of the country, is highly desirable; that similar benevolent institutions have been eminently successful in other countries, and are now contemplated in Philadelphia and New York; that they do not expect or desire any benefit or profit themselves; * * * that they are willing to devote a part of their time, without reward, to the management of such a charity, and give the profits to the depositors."

It is scarcely conceivable that the \$1,000,000,000 of deposits in the savings banks of the United States, are the accretions of wage-labor. The above estimate of total deposits is justified by the returns taken from the comptroller of the currency of the twelve States in 1876, which was \$892,785,553. New Jersey is set down as \$32,450,313, belonging to a body of depositors estimated at ninety-three thousand, the average to each depositor being \$348.92.

If in our country the same restrictions and limitations were in force respecting deposits and depositors as Parliament has enacted in *England*, the average to each depositor here, which is \$369.69, would unquestionably be very much smaller. *The first limitation in England is that deposits must be invested in 3 per cent. government annuities, and the interest as a maximum is 3 per cent., but in practice it runs down to 2½ per cent. The maximum deposit to one account for a year is \$150, and no depositor can open an account in*

more than one savings bank. The effect of these restrictions is exemplified in what follows.

In 1876 the *British savings banks* had on deposit \$351,000,000, less than half of our total at the same period, which is an average of \$12 *per capita*, while in this country the average is about \$25 *per capita*. It will be an additional item of interest in this connection, to know that in 1863 the *British post office savings banks* were established. Certain post offices in the kingdom are authorized by the government to receive deposits not less than one shilling to be transmitted to the central office in London. When the deposits amount to \$5, or £1, they draw interest at the rate of 2½ per cent. per annum. These deposits can be drawn from any post office savings bank in the kingdom. It was thought at one period that these government banks would supercede the other class, but this is not likely to be the case. The post office banks have risen from three hundred and one in 1863, to five thousand four hundred and forty-eight in 1876, and their total deposits were about £27,000,000; while the independent banks had a total of over £43,000,000.

The impression is very prevalent that vast amounts of capital formerly employed in various industrial pursuits has found a lodgement in the savings banks of our country, thus perverting them to an undesigned use. And moreover, that so long as the forehanded owners of these deposits can draw a fair dividend and be practically relieved from anxiety and risk respecting them, by reason of gratuitous legislative safeguards, they will refrain from all co-operative efforts to reanimate and reconstruct the commerce and industries of the nation. We have not the data upon which to base tenable deductions bearing upon this aspect of savings bank returns in our own State, but are more than half converted to the theory, that the country at large, and the industrial classes in particular, *would derive essential benefits by the adoption throughout the country, as near as possible, of uniform restrictive regulations in reference to savings bank deposits.*

In every aspect as now constituted, our savings banks present themselves to all grades of capitalists below the medium, as *conspicuously inviting depositories of uninvested funds, and we cannot but think it would be an easy task to outline the future in respect to our productive industries, if we should indefinitely multiply these deposit-*

ories without modification, and additional legislative restrictions tending to impel capital into spheres of activity which would manifestly be more conducive to the public welfare.

If we refer to our statutes upon this special subject, we will find that the only restriction respecting deposits is in section twenty-three of the general law, which says, "nor shall the aggregate amount of such deposit to the credit of any one individual or corporation at any time, exceed \$5,000 exclusive of accrued interest." In the old or original law there is *no limit* to the amount of individual deposits. It will be noticed that there is full freedom for the same individual to deposit a like amount in every savings bank in the State, which would be equivalent to \$190,000, and likewise by strategy multiply deposits to the full extent of his resources. This has been practiced extensively in other States, by the duplication of accounts, and the use of acquired names for the purpose of evading the law.

In his report of 1874, Superintendent Ellis, of New York, says: "The immense aggregate of deposits in savings banks, as shown by the tables, with its steady and rapid growth, suggests the question what is the character of these deposits? Do they belong to the laborer, the mechanic, the clerk, the comparatively poor producing classes; or are they the investments of capitalists and commercial men, seeking a safe and remunerative depository for their surplus funds? * * * While many of the savings institutions discourage this kind of deposits and strive to do only a legitimate *savings* business, in consonance with the theory and intent of the law organizing them, it can not be denied that others encourage large deposits, and seek a business largely commercial in its character. * * * The policy of receiving these deposits or large sums by the banks, may be seriously questioned, and I believe that *no sound argument can be made in its support. Just so far as we make these institutions commercial, instead of benevolent in their character and aim, just so far we travel in the wrong direction and endanger the safety of the whole system.*"

If it should be thought that our scanty information respecting the savings institutions of New Jersey scarcely justify the preceding disquisition, we must assure our readers that the relevancy of our remarks are much less local than general. We are not possessed of any evidence to impugn the fidelity or dis-

cretion of any existing savings institution in our State, and have the utmost confidence that neither skill nor prudence will be wanting in any future emergency demanding their exercise. The condition of the country has been such for a series of years that there is nothing strange or specially censurable in the diversion of an unwonted aggregate of unemployed capital into these attractive depositories. It is to be hoped, however, that a restored business activity throughout the country, will develop a counter incentive that will eventuate in the gradual withdrawal of these deposits, and their re-employment in pursuits more surely serviceable to the public good.

CLASSIFICATION OF OCCUPATIONS.

CLASS I.—(Day Wage.)

This Class includes all Persons who work for "day wages" where deductions are made for loss of time.

Agricultural laborers.	Masons.
Barbers, <i>journeyman</i> .	Mast, Spar and Block Makers.
Bar-keepers.	Mattress Makers.
Bakers, <i>journeyman</i> .	Mill and Factory Operatives, <i>N. O. S.</i>
Blacksmiths, <i>journeyman</i> .	Milliners.
Boot and Shoe Makers.	Oil Refining Operatives.
Butchers.	Paper Hangers.
Cabinet Makers, <i>jour.</i>	Paper Mill Operatives.
Carpenters and Joiners.	Painters, <i>jour.</i>
Cigar Makers.	Plasterers.
Coopers.	Printers.
Cotton Mill Operatives, <i>m. and f.</i>	Print Work Operatives.
Curriers and Leather Finishers.	Quarrymen.
Domestic Servants.	Rubber Factory Operatives.
Dress and Cloak Makers.	Sailmakers.
Employees of Manufacturing Establishments, <i>N. O. S.</i>	Saw Mill Operatives.
Fishermen.	Sewing Machine Factory Operatives.
Gas Works Employees.	Seamen.
Glass Works Employees.	Shop Girls.
Horse Railroad Employees.	Ship Smith.
Housekeepers.	Ship Carpenters.
Iron Foundry Operatives.	Ship Caulkers.
Knitting and Hosiery Mill Operatives.	Straw Workers.
Linen Mill Operatives.	Tailors and Tailoresses.
Laborers, <i>N. O. S.</i>	Tanners.
Machinists.	Teamsters— <i>see Instructions.</i>
Mechanics, <i>N. O. S.</i>	Tobacco Factory Operatives.
Minors— <i>see Instructions.</i>	Wheelwrights.
Marble and Stone Cutters.	Woolen Mill Operatives.

CLASS II.—(Salary.)

This Class includes all Persons whose compensation for Labor is a stated salary, where deductions for loss of time are not general.

Agents, Mill and Manufacturing.	Minors—see <i>Instructions</i> .
Bookkeepers and Accountants, <i>m.</i> and <i>f.</i>	Overseers and Foremen.
Clergymen.	Porters.
Clerks, <i>m.</i> and <i>f.</i>	Salesmen and Saleswomen.
Commercial Travelers.	Steam Railroad Employees.
Journalists.	Teachers.

CLASS III.—(Professional.)

This Class includes all Persons whose income is not properly wages or salary, being governed by services rendered.

Actors.	Dentists.
Architects.	Engineers, <i>Civil</i> .
Artists.	Lawyers.
Auctioneers.	Minors—see <i>Instructions</i> .
Authors.	Physicians.
Chemists.	Photographers.

CLASS IV.—(Use or Interest of Money.)

This Class includes all Persons whose income is derived from the Use or Interest of Money.

Barbers, Employers.	Livery Stable Keepers.
Billiard Saloon Keepers.	Milkmen.
Boarding-house Keepers.	Minors—see <i>Instructions</i> .
Bankers and Brokers.	Peddlers.
Bakers, Employers.	Restaurant Keepers.
Builders and Contractors.	Shopkeepers—all <i>Trades</i> .
Employers in Mechanical Business.	Undertakers.
Employers in Manufacturing Business.	Women not accounted for under Occupa- tions.
Farmers.	
Hotel Keepers.	

NOTE.—*N. O. S.* is used as an abbreviation for "not otherwise specified."

The Bureau desires the "Tally Blanks" kept from June 1, 1878, to September 1, 1878. Books should be returned by September 10, 1878, *by express*.

Should one book not be sufficient, others will be sent on application.

For full INSTRUCTIONS, see last page.

Address all communications or inquiries to

JAMES BISHOP, *Chief,*
Trenton.

"INSTRUCTIONS.

"To the Treasurer of the Bank:

"DEAR SIR:—As it is absolutely essential to secure uniformity in the keeping of the 'Tally Blanks,' the following instructions are respectfully offered; and conformity thereto will oblige the officers and facilitate the business of the Bureau:

"1.—Fill out form on outside of cover; we insert the office number.

"2.—At the head of each 'Tally Blank' page put the date ('From') when the first entry of a deposit is made on the page, and the date ('To') when the last entry is made.

"3.—The class of depositors that we desire a record of are those opening *new accounts* with your Bank during the three months that you are asked to keep the blanks, and we desire every deposit entered which is made by them.

"4.—When deposit is made, ascertain occupation; a reference to the "Classification of Occupations" on first page will show *the class* in which the deposit entry belongs. Turn to the appropriate class, and put down the *figures* representing the deposit, with due regard to the column heads 'Under \$300' or 'Above \$300.' This is the only entry for *each deposit* that you are requested to make.

"5.—If certain employments peculiar to your locality are not specifically named, a reference to the explanations under the class headings in the 'Classification of Occupations' will indicate the proper place for their deposit entries.

"6.—'Teamsters' should include all those who are hired to drive or take care of horses.

"7.—The deposits made by 'Minors' should be entered according to their occupations; if they have none, according to occupations of their parents or guardians.

"8.—The deposits made by 'Women' should, if possible, be entered under occupations; if not, reference should be had to occupation of father, mother or husband. Uncertain cases enter in Class IV.

"In addition to the keeping of the 'Tally Blanks,' you are respectfully requested to answer the following questions:

"From June 1, 1878, to August 31, 1878.

"1.—No. of different Depositors, January 1, 1878.....	.....
"2.—No. of different Depositors, January 1, 1877.....	.....
"3.—Entire amount of Deposits, January 1, 1878.....	\$.....
"4.—Entire amount of Deposits, January 1, 1877.....	\$.....
"5.—Entire amount of Deposits during year 1877.....	\$.....
"6.—No. 'New Depositors' opening accounts during 1877.....	.....
"7.—No. of Deposits made by such 'New Depositors' during 1877.....	.....
"8.—Amount deposited by such 'New Depositors' during 1877.....	\$.....
"9.—Total amount of Trust accounts of Individuals, to date, Jan. 1, 1878..	\$.....
"10.—Total amount of Trust accounts of Societies, to date, Jan. 1, 1878.....	\$.....

TABLE No. 1.—SAVINGS BANKS RECORDING OCCUPATIONS OF DEPOSITORS.

Showing total number of Depositors of each Class, and per cent.; also total amount deposited, with per cent. and average amount deposited by each Depositor of each Class.

Deposits for three months from June 1, 1878, to September 1, 1878, including all Classes.	No. of Depositors.	Pr. Ct. of Depositors.	Amount Deposited.	Per Cent. of Amount.	Ave. am't. deposited by each depositor.
Class—One.....	957	47.	\$126,947 04	41.6	\$132 65
Two.....	267	13.	29,686 16	9.8	111 18
Three.....	70	4.	9,358 55	3.1	133 69
Four.....	738	36.	139,322 60	45.5	188 78
	2,032		\$305,314 35		

TABLE No. 2.

Showing Increase or Decrease of Deposits, together with Amount deposited during 1877; also, the number of New Depositors, with the amount of their Deposits during the same period, and the total amount held in trust for Individuals and Societies January 1, 1878.

Office No.	Number of Depositors January 1, 1878.	Number of Depositors January 1, 1877.	Per cent. of Increase.	Per cent. of Decrease.	Entire Amount of Deposits January 1, 1878.	Entire Amount of Deposits January 1, 1877.	Per cent. of Increase.	Per cent. of Decrease.	Number of new Depositors opening Accounts during 1877.	Number of Deposits made by such new Depositors.	Total Amount Deposited.	Total Amount of Trust Accounts of Individuals to Jan. 1, 1878.	Total Amount of Trust Accounts of Societies to January 1, 1878.
9.	5,281	5,113	3.3	.....	\$2,761,100 01	\$3,044,658 93	.....	9.3	1,261	2,191	\$415,651 53	.....	.....
2.	774	688	12.5	.....	125,351 78	105,961 26	15.5	.....	147	247	23,909 05	\$114 00	\$80 00
11.	3,119	3,228	.....	3.4	1,076,557 70	1,103,995 18	.....	2.5	559	.....	94,592 65	24,881 86	23,968 10
7.	1,341	1,369	.....	2.	177,767 99	196,468 93	.....	9.5	259	671	23,987 74	43,552 98	12,999 81
6.	2,794	3,450	.....	19.	568,189 02	743,783 27	.....	23.6	733	.....	.....	.....	.....
8.	10,217	10,802	.....	5.4	4,652,075 26	4,609,621 74	.9	.....	1,359	.....	.....	.....	.....
1.	215	258	.....	16.6	39,606 74	54,893 57	.....	27.8	36	60	12,561 11	2,733 50	1,895 05
3.	666	696	.....	4.3	94,423 26	109,314 98	.....	13.6	96	179	11,093 09	1,229 09	780 34
5.	422	457	.....	7.7	75,735 57	83,678 10	.....	7.7	97	236	12,000 00	6,500 00	1,000 00
4.	1,113	1,133	.....	1.8	347,760 77	362,178 99	.....	4.	355	650	44,364 02	4,568 73	760 37
10.	183	167	9.6	.....	22,826 35	21,014 84	8.6	.....	44	68	1,642 82	2,264 72	2,610 64
12.	4,015	3,877	3.6	.....	1,004,580 85	972,607 10	3.3	.....	1,078	2,177	199,576 00	62,816 03	12,181 40
13.	576	551	4.5	.....	36,361 77	36,973 60	.....	1.7	157	387	10,441 17	11,585 92	11,693 75

Office No.	Total Amount deposited from June 1, 1878, to August 31, 1878, with their Classification.	Average amount of each deposit.	Per cent. of No. of Deposits.	Per cent. of amount of Deposits.	Numbr of Deposits \$300 and under.	Amount of same.	Per cent. of No. of Deposits, \$300 and under.	Per cent. of amount of Deposits, \$300 and under.	Numbr of Deposits over \$300.	Amount of same.	Per cent. of No. of Deposits ab. \$300.	Per cent. of amt't of Deposits ab. \$300.
11	Whole number of Deposits 230, amounting to \$29,819.08.	\$129 64			202	\$9,809 08			28	\$20,010 00	32.	
	Class 1—Day wage.....	122 70	30.4	28.7	61	2,639 26	30.2	26.9	9	5,950 00	32.1	29.7
	2—Salary.....	227 70	13.5	23.6	26	1,259 00	12.8	12.8	5	5,800 00	17.8	29.
	3—Professional.....	292 86	3.	7.	4	490 00	1.9	4.9	3	1,560 00	10.8	7.8
	4—Use or Int. of Money.....	99 35	53.	40.7	111	5,420 82	55.	55.4	11	6,700 00	39.3	33.4
9	Whole number of Deposits 865, amounting to \$144,584.80	167 15			742	63,189 67			123	81,395 13		
	Class 1—Day wage.....	151 27	46.6	42.2	357	32,375 93	48.1	51.2	46	28,586 30	37.4	35.1
	2—Salary.....	102 22	15.2	9.2	125	8,790 70	16.8	13.9	6	4,600 00	4.9	5.7
	3—Professional.....	77 33	4.4	2.3	37	2,098 30	5.	3.3	1	840 00	.8	1.
	4—Use or Int. of Money.....	229 67	33.8	46.3	223	19,924 74	31.	31.5	70	47,368 83	56.9	58.2
2	Whole number of Deposits 45, amounting to \$2,179.51	52 88			45	2,379 51						
	Class 1—Day wage.....	57 43	46.6	50.7	21	1,206 14	46.6	50.7				
	2—Salary.....	14 49	11.1	3.1	5	72 47	11.1	3.1				
	3—Professional.....	25 00	2.2	1.	1	25 00	2.2	1.				
	4—Use or Int. of Money.....	59 77	40.	45.2	18	1,075 90	40.	45.2				
8	Whole number of Deposits 471, amounting to \$83,795.22.	177 91			384	21,450 47			87	62,344 75		
	Class 1—Day wage.....	158 05	60.3	53.3	241	13,359 73	62.8	62.2	43	31,527 17	49.4	50.5
	2—Salary.....	109 82	11.8	7.4	47	2,045 43	12.2	9.5	8	3,995 00	9.2	6.4
	3—Professional.....	247 16	3.4	4.7	12	1,004 50	3.	4.9	4	2,950 00	4.7	4.7
	4—Use or Int. of Money.....	249 25	24.4	34.5	84	5,040 81	22.	23.5	32	23,872 58	36.7	38.3
1	Whole number of Deposits 9, amounting to \$712.	79 11										
	Class 1—Day wage.....	20 00	11.1	2.8								
	2—Salary.....	125 00	22.2	35.1								
	3—Professional.....											
	4—Use or Int. of Money.....	73 66	66.6	62.1								
3	Whole number of Deposits 30, amounting to \$1,297.29.	43 24										
	Class 1—Day wage.....	57 12	13.3	17.6								
	2—Salary.....	36 15	33.3	27.8								
	3—Professional.....	35 34	10.0	8.1								
	4—Use or Int. of Money.....	46 25	43.4	46.4								
7	Whole number of Deposits 79, amounting to \$3,988.19.	50 49			76	2,303 19			3	1,685 00		
	Class 1—Day wage.....	26 96	82.2	43.8	64	1,327 81	84.2	57.6	1	425 00	.3	25.2
	2—Salary.....	435 00	2.6	21.7	1	70 00	1.3	3.	1	800 00	.3	47.5
	3—Professional.....	1 25	1.2	.3	1	1 25	1.3	.5				
	4—Use or Int. of Money.....	124 01	14.	34.2	10	904 13	13.2	39.2	1	460 00	.3	27.3
5	Whole number of Deposits 17, amounting to \$1,891.65.	111 27										
	Class 1—Day wage.....	111 27	100.	100.					1	900 00	100.	100.
	2—Salary.....											
	3—Professional.....											
	4—Use or Int. of Money.....											
4	Whole number of Deposits 27, amounting to \$2,249.94.	83 33			24	1,231 56			3	1,018 38		
	Class 1—Day wage.....	35 22	34.7	14.1	9	317 00	37.5	25.7				
	2—Salary.....	74 95	30.6	30.	9	674 56	37.5	54.7				
	3—Professional.....											
	4—Use or Int. of Money.....	139 82	34.7	55.9	6	240 00	25.	19.5	3	1,018 38		
10	Whole number of Deposits 19, amounting to \$2,153.29.	113 06			17	1,151 00			2	1,002 29		
	Class 1—Day wage.....	51 16	31.6	17.2	6	370 00	35.3	32.1				
	2—Salary.....	63 83	31.6	17.8	6	383 00	35.3	33.3				
	3—Professional.....											
	4—Use or Int. of Money.....	200 04	36.8	65.	5	398 00	29.4	34.6	2	1,002 29		
6	Whole number of Deposits 203, amounting to \$30,272.18.	149 12			177	10,964 18			26	19,308 00		
	Class 1—Day wage.....	120 53	26.1	21.1	44	2,268 00	24.8	20.7	9	4,120 00	34.6	31.3
	2—Salary.....	38 73	7.4	1.9	15	581 00	8.7	5.3				
	3—Professional.....	56 70	2.4	.9	5	283 50	2.7	2.6				
	4—Use or Int. of Money.....	177 07	64.	76.	113	7,831 68	63.8	71.4	17	15,188 00	65.4	78.7
13	Whole number of Deposits 37, amounting to \$2,171.20.	58 70			35	771 20			2	1,400 00		
	Class 1—Day wage.....	14 54	62.2	15.4		334 55	65.6	43.4				
	2—Salary.....	3 50	2.7	.2		3 40	3.	.5				
	3—Professional.....											
	4—Use or Int. of Money.....	141 01	35.1	84.4		433 15	31.4	56.1		1,400 00		

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CHAPTER VI.

CLIMATE AND SANITARY CONDITION
OF NEW JERSEY.

CHAPTER VI.

CLIMATOLOGY OF SOUTHERN NEW JERSEY.

BY JOHN W. SNOWDEN, M. D.

The climatology of Southern New Jersey, including the counties of Camden, Gloucester, Cumberland, Salem, Cape May and Atlantic, is a subject of important interest, deserving the attention of the medical profession and the community at large.

As a health resort, this section of the State has long been known to a few and, if its merits were thoroughly understood, it would become one of the most popular resorts for the invalid, in the Northern States.

When we look for an explanation of the peculiar healthfulness of this part of the State, in its geological formation, we find nothing to distinguish it. According to the geological survey of Professor George H. Cook, the same formation, the tertiary, extends over all that part of the State lying southeast of an almost direct line from Elsinborough township, in Salem county, on the Delaware river, to a point near Long Branch, on the Atlantic coast. The remainder of South Jersey is in the cretaceous formation, including a portion of the green sand marl beds.

There is some difference in the surface soil of South Jersey, some parts of it being very sandy, which, undoubtedly, has much to do with the beneficial effects of residence in a part of this section upon certain diseases.

In a meteorological aspect, there is much in South Jersey to interest the observer. Dr. J. Ingram, of Vineland, a highly intelligent gentleman, who, for a number of years, has made observations of the meteorology of that place, in connection with the "Signal Service Bureau," has kindly furnished a very interesting report of his statistics, which will be found appended.

Upon examining the report of the Signal Service Bureau for 1877, we find the items contained in the following table:

	BAROMETER.	TEMPERATURE.			Rain.
	Mean.	Max.	Min.	Mean.	
Atlantic City.....	30.015	98.4	4	50.5	33.19 in.
Barneгат.....	30.004	95.0	4	50.3	43.17 in.
Cape May.....	30.016	89.0	8	53.1	43.82 in.
Sandy Hook.....	29.992	100.0	6	51.5	51.35 in.

I do not give the report of humidity, on account of its want of reliability. The points of observation are at different distances from the surf. That at Atlantic City, being upon the very edge of the water, so that when the wind is blowing heavily from the sea, the station must be surrounded by the spray from the breakers.

Prof. Jno. C. Smock says, "The annual mean temperature of the southern end of the State is between fifty-three and fifty-four degrees.

The isothermal lines include the northern parts of Virginia, Kentucky, Missouri and the southern portions of Pennsylvania, Ohio, Indiana and Illinois, showing that the average temperature of the year is higher in South Jersey than in the corresponding latitude of the Middle and Western States.

For the summer months the mean temperature of that part of the State south of Philadelphia is seventy-three to seventy-four degrees and is isothermal in the Western States with Cincinnati, Springfield and Rock Island.

For the winter months the mean temperature of South Jersey is between thirty-two and thirty-four degrees, the isothermal line of which degrees tends slightly south of west in crossing Maryland, Virginia and so on near the line of the Ohio river to St. Louis.

The modifying influence of the ocean raises the mean temperature of the winter and lowers that of the summer, so that while the isothermal lines for the year run westward from New Jersey nearly parallel to the corresponding lines of latitude, those of the warm months curve northward after crossing the Appa-

lachian ridges, and those of the winter are slightly deflected toward the south."

In confirmation of these remarks upon temperature, the flora of South Jersey is found to be essentially different from that of adjacent States, and is similar to that of Virginia and the Carolinas.

A recent writer says, "in the opinion of botanists there is no section of country in the United States, perhaps in the world, that equals Southern New Jersey for the number and variety of interesting, native plants. Not only do many of the plants of the North and South meet here, but we find rare species peculiar to this region alone."

According to statistics, the rainfall of Cape May and Cumberland counties exceeds, considerably, the average of the remaining counties of South Jersey. The fall of snow varies very much. During some winters, there is not snow enough to whiten the ground, while in others there are heavy falls of snow which, however, soon melts, so that good sleighing is seldom seen.

Southern New Jersey is remarkable for its healthfulness. Having practised medicine thirty-three years in South Jersey, the writer, from actual observation is able to say a great deal in favor of the healthfulness of that part of the State and the benefits to be derived from a residence there in many diseases; but to avoid the imputation of prejudice or self-interest, will say, here, that all remarks on this subject are based upon the written opinions of many resident physicians, who are cognizant of the facts in the case.

Many parts of the interior of this section, under the name of "the Pines," have for years been resorted to by the comparatively few, who have been aware of the advantages to be gained by those in quest of health and strength

It was formerly thought that a growth of pine timber was of the first importance in the selection of a healthful resort in South Jersey, but, as the land is being rapidly cleared of timber by the farmer, this idea is found to be erroneous. The same beneficial effects are experienced in spite of the absence of the much vaunted pine.

We must look then for an explanation of the healthfulness of this section to the meteorological conditions and the dryness of

the soil. No matter how great a rainfall may occur, in a few hours after its cessation, no water is to be seen on the surface.

Prof. Smock says "the milder features of the climate of New Jersey make it not only more wholesome, but more attractive. As compared with New York and the New England States, the extremes of Summer are not greater than in those States, while the heat continues later in the Autumn and fine weather, known popularly as Indian Summer, is often prolonged into December.

"During the Winter, the depressions are generally from ten to twenty degrees less, and such extreme cold does not often last more than three or four days. Mild weather is common during the Winter, so that in the Southern part of the State, plowing is frequently done in every month of the year. The Spring opens about a month earlier than in Central New York or New England.

"This longer duration of warm and pleasant weather, and freedom from great extremes of heat and cold, together with its general healthfulness, make New Jersey the most attractive of the Atlantic States, considered from a climatic standpoint."

Diseases of the respiratory organs, particularly, are much benefited and often cured by a residence in South Jersey. Dr. Stevenson, in the *Medical Times*, says "that it is a desirable place of residence for sufferers with pulmonary complaints has become so well known throughout some portions of our country, particularly in New England and Northern New York, that two large settlements—Hammonton and Vineland—have been formed largely of persons seeking this favorable climate for the relief of those affections. My attention was first called to these facts during 1863 and 1864, while acting as the examining surgeon for the government, to examine drafted men and volunteers for the army.

"During this time, about three-fourths of all the men between twenty-one and forty-five years of age, residing in that section of the 'pines' south of the line of Burlington county, came before me for physical examination and were found to be remarkably free from pulmonary diseases, except the very large number of settlers who had moved there because suffering from them.

"I took especial pains to question the latter about their experience of the effects of the climate, and was almost invariably

told that they had been benefited and many had entirely recovered. Since then, a number of cases have come under my observation of marked benefit resulting from a residence there."

Among the affections of the respiratory organs, asthma is particularly benefited here. Some very remarkable cases have been noted.

Mrs. P., eighty years of age, suffering from asthma, cannot live with any comfort in Newark, N. J., her place of residence, has spent the last three years in Vineland quite comfortably.

Mrs. S., of New York city, was obliged to leave that place on account of asthma, and is living in Vineland very comfortably.

Mr. K., from Maine, seventy-three years old, came to Ham-monton, with asthma, thirteen years ago, and has had none since.

Rev. Mr. P. came from one of the Southern States, to Ham-monton, suffering with asthma, twenty years ago, and has had very little since.

Mr. G., of Maine, came to Hammonton recently, with asthma, and is so much relieved that he is building a house and will remain in that place.

Dr. N., from Wisconsin, on his way to Hammonton, staid in Philadelphia and was obliged to sit at an open window all night, fearing he would die with asthma before morning. At Ham-monton, he slept all the next night, on a feather bed, which he had not done for twenty years. He remained there quite comfortably for several years. He then went to Colorado, on business, and died of asthma in less than a week after his arrival there.

Diseases of the kidneys and bladder are relieved and frequently cured by a residence in South Jersey. In this class of diseases it is important that the persons affected should reside in a pine district, and drink the cedar swamp water. The terebinthinal matter in the air and water having much to do with the beneficial results.

Dr. B. went to Hammonton with disease of the kidneys, hæm-aturia, &c., and was cured, he says, by the air and water of the place.

Other similar cases could be adduced. South Jersey is a desirable locality for all asthenic diseases. Upon inquiry, it will

be found that nearly every family in Vineland and Hammonton has come there on account of the ill-health of one or more of its members, and that they have almost invariably been relieved.

It is a matter of remark, by those coming to this part of the State, that, sick or well, they eat more, sleep better and feel stronger than elsewhere.

There is a section of country, in the Eastern part of South Jersey, which is entirely free from malarial fevers. Intermittent and remittent fevers never occur in this district. There are occasional cases of what is called remittent or bilious fever, which are really the result of gastric or hepatic derangement and are cured in a few days without the use of antiperiodics, showing that they are not of malarial origin. The annexed map shows this district enclosed in red lines.

Dr. Stout, an old practitioner in Berlin, says, "he never knew a case of intermittent fever to originate in that place or vicinity."

Dr. Boylen, of Egg Harbor City, says, "I never saw a case of intermittent fever originating here. I have only treated two cases of intermittent and one of remittent fever, all originating elsewhere."

Dr. McKelway, of Williamstown, Gloucester county, says, "malarial fevers are of rare occurrence. In fact, in the last ten years I have only seen two cases of intermittent fever, one from the Chickahominy swamps of Virginia, and the other from the seaboard of North Carolina."

The writer can testify that the lower part of Camden county and the adjacent parts of Atlantic and Gloucester counties are entirely free from these diseases.

It is a singular fact, that when this district was studded with saw-mills, before the timber was cut off, milldams would often be broken by the freshets from sudden showers, or other causes, at all seasons of the year, exposing large areas of decaying vegetable matter from which the odor would be almost intolerable, yet no cases of fever ever occurred among those living near.

Physicians outside of this district, in every direction, report intermittent and remittent fevers as being more or less prevalent. One gentleman writes "the one malady, for which the profession in this place should be thankful, is the never-failing intermittent fever."

The diseases of all parts of South Jersey are similar in character, being those which are incident to mankind in the same latitude elsewhere, excepting in the small district which has such a remarkable exemption from malarious fevers. Here, in this sandy region, formerly called "the pines," most diseases, epidemic or endemic, seem to assume a comparatively milder form and are attended with less fatality.

In conclusion, we have in South Jersey a vast health resort, in which diseases of almost every type may be relieved if not cured. Upon the coast are to be found seaside resorts, in great variety, where rich and poor may avail themselves of the advantages to be derived from such localities.

Away from the coast, the invalid, with whom the sea air does not agree, may select situations suitable to his disease or inclinations. Here Professor Mitchel's "camp cure" may be tried with every prospect of success, and without a tedious journey to a distant locality.

Here the farmer or man of means will find land at all prices, where he can take up his residence with easy access to business, schools, &c., and with the prospect of health and longevity for his family. The numerous railroads traversing the country, facilitate daily intercourse with the two great cities of Philadelphia and New York.

The wealthy invalid alone can go to Florida or Colorado, and, after a tedious journey, he finds discomforts of every kind, and, perhaps, dies far from kindred or friends.

From South Jersey, home can be regained in a few hours, or, from Philadelphia, when needed, the best medical talent can be obtained with but little delay.

These are advantages which cannot be enjoyed in distant places of resort, and they are becoming known, so that, at no very distant day, the unoccupied lands of South Jersey will become covered with such places as Vineland, Hammonton, Egg Harbor City, &c.

REPORT OF WEATHER AT VINELAND, N. J., FOR 1877, AND ALSO FOR
TEN YEARS FROM JANUARY 1, 1866, BY J. INGRAM, M. D.

The observations were made three times a day, consecutively, from first-named period to this date, (July 25, 1878,) and em-

braced the barometric, thermometric and psychrometric observations, with first-class instruments; and observations on wind, rain, clouds, storms, frost, snow, &c.

MONTHS.	BAROMETER.	TEMPERATURE.			Relative humidity.	Rain-Inches, &c	Rainy days.
	Mean.	Max.	Min.	Mean.			
1877—July	29.801	95	66	78.82	82	7.12	12
August	29.832	92	63	75.26	80	2.05	5
September	29.968	82	42	66.25	77	5.99	6
October	29.909	72	39	56.34	84	5.83	11
November	29.933	68	20	45.58	83	5.12	11
December	30.058	61	19	39.10	85	1.88	4
1878—January	29.918	53	7	32.79	86	4.50	13
February	29.810	67	12	36.53	85	1.73	6
March	29.831	68	19	45.80	87	3.89	9
April	29.638	85	33	56.12	87	2.36	9
May	29.731	86	43	62.09	84	4.15	8
June	29.742	92½	48	68.77	85	5.36	8
Sums						49.98	102
Means	29.847	76.79	34.25	55.28	83	4.16	8.5

Wind for twelve months; observations made three times a day—7 A. M., 2 P. M., and 9 P. M.:

	N.	N. E.	E.	S. E.	S.	S. W.	W.	N.W.	Total.
1877—July	6	18	0	6	9	34	3	17	93
August	3	11	0	2	5	53	5	14	93
September	5	23	0	11	5	31	0	15	90
October	2	15	2	14	1	35	2	22	93
November	1	8	5	11	9	14	4	38	90
December	10	20	0	4	10	27	5	17	93
1878—January	2	12	3	15	3	25	3	30	93
February	16	13	2	1	7	15	3	27	84
March	6	9	0	8	10	21	4	35	93
April	1	17	1	26	4	19	6	16	90
May	4	9	0	10	6	29	7	28	93
June	6	15	6	8	3	33	2	17	90
Totals	62	170	19	116	72	336	44	276	1095

This table represents an average statement of the course of the wind at this place, one year with another.

Total rainfall and number of rainy days in ten years :

	Total Rain.	Rainy Days.
1866.....	38.02	67
1867.....	47.17	118
1868.....	51.96	115
1869.....	52.70	111
1870.....	48.03	99
1871.....	53.63	103
1872.....	44.23	107
1873.....	56.94	116
1874.....	42.44	90
1875.....	48.26	102
General average.....	48.34	103

The following represents the extremes and means of *tempera-
ture*, the average rain fall and number of rainy days in each
month for ten years, *i. e.*, the numbers opposite each month rep-
resent the maximum, minimum and means of temperature for
ten years, &c. :

	Max.	Min.	Mean.	Rainy days.	Rain.	
January.....	56°	8°	31°.06	9.2	3.93	
February.....	63°	4°	32°.50	7.0	3.94	Spring {
March.....	67°	14°	38°.70	10.6	4.50	
April.....	79°	31°	50°.45	9.4	3.73	
May.....	88°	42°	61°.80	9.0	3.94	Summer {
June.....	91°	50°	75°.80	8.2	5.43	
July.....	98°	60°	78°.50	8.6	3.98	
August.....	93°	57°	74°.50	9.7	5.26	Autumn {
September.....	86°	42°	65°.00	6.3	4.28	
October.....	87°	29°	55°.20	7.6	3.62	
November.....	68°	19°	42°.10	7.3	3.77	Winter {
December.....	57°	8°	32°.90	10.0	3.80	
Means.....	81°	36°	53°.22	8.5	4.19	

Annual temperature 53°.18
or isotherm of this region.

The following statement will give a general idea of the period during which vegetation is safe from frost in Vineland, N. J.

Date of latest killing frost in Spring.	Of earliest killing frost in Fall.	Intervening period.
1866, April 10th.....	October 24th	178 days
1867, April 20th.....	October 1st.....	164 days.....
1868, April 24th.....	October 18th	177 days.....
1869, March 24th	October 21st.....	210 days.....
1870, April 20th.....	October 19th	182 days.....
1871, April 30th.....	October 21st.....	174 days.....
1872, April 17th.....	October 12th	178 days.....
1873, April 27th.....	October 29th	185 days.....
1874, April 30th.....	October 15th	169 days.....
1875, April 18th.....	October 13th	178 days.....
1876, April 19th.....	October 12th	176 days.....
General average.....		180 days.

Or a period of six months during which the cycle of vegetation for all crops in this latitude can be completed, especially with a temperature averaging 66° most of the time. This allows ample time for the maturity of all cereals, fruits, &c., and especially for the ripening of the grape—a fruit requiring from stoning to maturity a temperature of 56° to 65° for winemaking purposes. This period also gives a rainfall of over thirty-two inches, and an average of fifty-six rainy days, with an average relative humidity of 82.

This group of climatic conditions commands the thoughtful attention of all farmers and fruit-growers; and if to this be added the quality of soil, ready facilities for obtaining marl, lime, &c., and proximity of boundless markets, surely this class of our citizens need not fear either the sources of production or the facilities for disposal of every crop possible to this climate.

In point of healthfulness, this region will bear a favorable comparison with any other section of South Jersey. It may, with entire truthfulness, be said that malarial diseases are unknown here; no indigenous case of malaria has been seen by me in a period of thirteen years' residence here and in a practice of an extensive and general character.

We find some bilious diseases, typhoid fever of a mild form, rheumatism, some diphtheria, dysentery, &c.

Cases of phthisis in its incipiency when brought here usually obtain a respite of several years; but entire relief from this disease here is very doubtful.

CHAPTER VII.

INDUSTRIES.

POTTERY, FLAX, HEMP

AND CRANBERRY.

CHAPTER VII.

THE POTTERY INDUSTRY.

There is no single industry in our State that gives promise of a better future than that of pottery. We have special reasons for directing public attention to it through the medium of this department, primarily, because of its intrinsic importance, and secondarily, because authentic records show that New Jersey is in advance of any other State in the successful prosecution and development of the pottery interest, and ranks all other States in production.

It should be a subject of congratulation, and surely of State pride, that this ancient and captivating art-industry has in such a brief period become so widely identified with our State. And moreover that it is in the hands of such an exceptional class of men, who lack no essential requisite to assure continued achievements no less extraordinary than those we have all witnessed in the past few years.

Perhaps the distinctive association of American pottery with New Jersey, is traceable in a large degree to the character of her renowned clay beds, and the State's own display of wares at the Centennial. Our pottery manufacturers were justly entitled to all the domestic and foreign commendation accorded to them for that display. Foreign commissioners and foreign competitors were alike impressed with what to them was a magical revelation. They visited our shores prepared for surprises, and in respect to this *special department*, they were not only lavish of praise, but without reserve conceded the highest superiority to our ceramic attainments. They would be even more amazed were they to revisit our potteries *now*, for the past two years have been the most notable of any for advances in skill and taste, both in designing and decoration. It cannot be questioned that this new impulse to the industry, which is conspicuously illus-

trated both in its growth and artistic merit, is due in a very large degree to a combination of influences directly emanating from the Centennial. Had it been otherwise, expectations would have been disappointed, and the result at variance with realizations at previous international exhibitions.

European competitors in all the advanced industrial pursuits, have possessed advantages for maintaining their supremacy greatly superior to ours. In addition to their indefinitely multiplied art and trade educational facilities, their competitive emulation is periodically incited by continental displays of the highest types of progress in every department, of art and industry. To be sure our artisans have been invited to participate in these world contests, and they have done so with unbounded success and profit, notably in manufactured products other than those involving skill and taste.

Previous to our own exhibition, for obvious reasons, our manufacturers and artisans have only to a very limited extent been able, personally, to scrutinize the collective displays at international exhibitions. It would have been unlike our people therefore, not to have derived profit from viewing at Philadelphia, the diversified products and artistic achievements of races of people who had acquired their marvellous capabilities in art pursuits, chiefly from perfected educational appliances unknown to us, but just as essential in America as they are in Europe, unless our people are content with simply an approach to other nationalities in artistic attainments.

Our recent strides in the elevated branches of industrial art, are incompatible with indifference and inactivity in respect to individual and legislative encouragement, to ensure additional attainments. We have already clearly demonstrated genius and aptitude for the successful prosecution of every desirable industry within the range of our country's industrial and commercial needs, and have no occasion to be in haste to achieve distinction in the more purely aesthetic fields of art which at best will have a remote realization, until we have won maximum success in more attainable spheres. *Industrial and commercial pursuits must be uppermost in our regards, for they are chiefly to be depended upon to restore prosperity and enhance our national wealth.*

We would not be understood as discouraging the highest

possible attainments in art culture, through the establishment of modern artistic and scientific institutions embodying the most approved methods of instruction. We simply assign the highest grade of art a secondary place, because of its unavailable character in its relations to general prosperity. *The country is by no means destitute of incipient taste and native talent adequate to the ultimate development of a National system, under such art training as is everywhere indispensable for such a purpose.*

It is undeniable that the prominent characteristic of our people is utilitarianism and to be consistent with that idea on the present occasion, we will consider art in its commercial relations.

To say that we have too long ignored the essential value of industrial education, is only to re-state that the same lack of foresight was exemplified in Germany fifty years ago, and in England twenty-five years ago, and it would be well for us, after having unconsciously fallen into the same misconception in respect to appropriate education of the masses, to imitate both of these nationalities in their recourse to a system of practical education which fitted the masses for industrial life, and in a brief period vastly augmented the industrial resources and commercial wealth of both nations.

Where useful raw materials are so abundant as they are in this country, their highest utility is dependent upon the capability of manufacturers to infuse the artistic element, for the purpose of enhancing the value of their products. Pottery will most effectively illustrate the intrinsic value of art education, by reason of the predominance of the art element displayed by the potter and the artist under the inevitable influence of such education, over the cost of the materials.

American enterprise and skill has perhaps one of its best illustrations, too, in the pottery interest, considering the time that has been occupied, especially in the recent development in the quality of wares, and in the art of decoration and design. While coarse specimens of earthenware were made in various parts of our country nearly a century ago, the industry as it presents itself to-day is, for the most part we believe, the achievement of the last twenty years, and within the limits and under the auspices so pre-eminently associated with our State, that we

cannot withhold from it our utmost fostering care, without committing the gravest paternal indiscretion.

The present advanced state of the ceramic art in this country was forecasted in the following quotation from the *American Museum* of 1791 :

“Manufactures of glass, of earthenware, and of stone, mixed with clay, are all in an infant state. From the quantity and variety of the materials which must have been deposited by nature in so extensive a region as the United States, from the abundance of fuel which they contain, from the expense of importation, and loss of fracture which falls on glass and earthenwares, from the simplicity of many of these manufactures, and from the great consumption of them, impressions of surprise at this state of them, and a firm persuasion that they will receive the early attention of foreign or American capitalists, are at once produced. Coarse tiles and bricks of an excellent quality, potters' wares, all in quantities beyond the home consumption, a few ordinary vessels and utensils of stone mixed with clay, some mustard and snuff bottles, a few flasks or flagons, a small quantity of sheet-glass and of vessels for family use, generally of the inferior kinds, are all that are now made.”*

It is represented that the first pottery built in New Jersey was about the year 1800, and located at Herbertsville, or Old Bridge, in Middlesex county, on the eastern shore near the clay beds. Stoneware, terra cotta, yellow and Rockingham ware, have been produced in that locality, more or less ever since. Four years previous to this, stoneware was made at Bean Hill and Norwich, Connecticut. In 1800 jugs, butter-pots, and other utensils of gray color were made at Hartford and Norwalk, Connecticut, but still the pewter dishes, pewter water pitchers and modern trenchers were in common use, except in well-to-do families in which Queensware began to displace the more primitive wares of domestic manufacture.

Attempts were made in Philadelphia as early as 1816 to make what was called Queensware, and subsequently the same parties extended their experiments to mixing of feldspar and kaolin, from which they are said to have made very good porcelain. Successive kilns of this description of ware were burned but with very

*Wm. C. Prime's "Pottery and Porcelain."

poor success, in respect to glazing and blistering. It was afterwards discovered that the chief impediment to success in this instance, was the presence of a kilnman who was detected in clandestine manipulations, which were believed at the time to have a transatlantic origin, with the view to retard success. The same parties persevered in the endeavor to achieve their aim in the porcelain line until 1837. Some very good specimens of this ware are to be found in Philadelphia and elsewhere. The first attempt at figures in enameled porcelain was made in Bennington, Vermont, about 1850.

Jersey City lays claim to the first whiteware kiln in this State, which was built in 1825, and attempts at decoration are also traceable to this establishment, specimens of which are still extant. The proprietorship of this early pottery enterprise, and the location, were several times changed, but continued within the limits of Jersey City. In 1847 under the auspices of a decorator from New York, a distinctive decorating department was established in "Gregory's Row," Jersey City. Subsequently it was removed to a building belonging to the Van Vorst estate, where its operations were so extended as to employ forty apprentices and journeymen. From this decorative establishment, several apprentices became proprietors of others in various parts of the country, including Trenton.

The leading men in these Jersey City pottery and decorating enterprises were Frenchmen. They produced some good specimens of hard-paste porcelain, together with white and brown ware, both decorated and undecorated, with colored enamels and raised work, which was marked "American Pottery Company, Jersey City." The kaolin and china clays used by these parties, were imported from France.

It is believed that the first ware made upon the English plan of "throwing and turning" was successfully made in Jersey City. All kinds of "C. C." and white ware for table and toilet purposes, are still made there. James Taylor worked at this pottery as long ago as 1832, and was undoubtedly the first practical *thrower upon the wheel* in this country, and he afterwards became the pioneer potter in the city of Trenton.

In 1852 the firm of Taylor & Speeler was organized, and they at the outset made white ware, together with the yellow and

Rockingham. Having started the industry in Trenton, other firms soon followed in the department of white ware. The early attempts in this line of ware, were attended with various degrees of success. Primarily, great difficulty was experienced in the impurity of the clays, and in grading and mixing the various kinds. For fuel, wood was used at the start; then bituminous coal, but satisfactory results were not attained until in 1860, when hard coal came into general use for pottery purposes, and its advantages in cleanliness and economy constituted the period of its adoption, a notable epoch in the pottery industry.

The growth and improvement in this State industry, has already been adverted to as bordering on the marvellous. It is not alone in ordinary domestic crockery, but it is conceded by foreigners even, that our stone porcelain or American china is the best in the world, and we are rapidly supplanting with it, not only the English, but the French, in American markets. This arises in part from the conceded superiority of our materials for porcelain. They are said to possess the quality of durability in a greater degree than the imported. They produce a surface and color better adapted to decoration. A French importer of porcelain has recently stated in Trenton, that the color of our porcelain has the same creamy tint the *Sevres* ware has.

Porcelain has been made in New York for more than ten years, and in Trenton more recently. Importers of English and French fancy porcelain have assured our potters that for body, surface and color, our porcelain is not surpassed in any country. Thus the quality of American porcelain is no longer a question. The cost is the only obstacle, and that will soon be overcome. It will not be long before true, or transparent porcelain, will become as great an American triumph, as stone white ware is already.

Our achievements are not confined to the body and surface of the wares, but they extend to the sphere of ornamentation and design, in both of which we are steadily gaining new triumphs. The decorator's art is daily assuming more importance, and some of the potters are extending their facilities to meet the increasing demand for decorated wares.

There is no question but that the Centennial Exhibition exerted a very great influence upon American taste, and notably

in respect to ceramics, and that it has eventuated in a widespread ceramic mania, the effect of which has been in a high degree beneficial in regard to production, and excellence of wares.

The fact that our people have become enthusiastic in the accumulation of diversified ceramics, has been vastly serviceable in the enlargement and artistic development of the industry, for it necessarily has brought into our country the best illustrations of recent and remote achievements in the art, to amplify private and public collections, thereby rendering them valuable auxiliaries to those who were pursuing art studies in that line.

There is no industry more essentially dependent upon skill and taste for its fullest development and pre-eminence, than that of pottery. The highest achievements resulting from the application and influence of art upon pottery, has but a meagre foreshadowing even in the most highly vaunted specimens, ascribable to American skill and taste. This affirmation is not designed to have a disparaging significance, but to intensify our State and country's deficiency in appliances to promote art-culture and industrial training. The learned professions and general education and culture are amply provided for, but in our view there is much greater necessity for attention to the former than the latter. The modern system is to combine the two, and the longer we postpone its adoption, the more inadequate will be our capabilities to encounter menacing foreign competition, and to utilize and render our raw materials and other resources at command, in the highest degree subservient to every public interest.

We should be very remiss not to couple with our panegyric on American pottery, the recent achievements in one of the Trenton potteries, in enamel painting and Parian statuettes and busts of original designs, in which there are unmistakable expressions of genius both in design and execution.

The art-industrial achievements we have dwelt upon with considerable detail because of their distinct relevancy to important established State interests, most effectively indicate both the necessity and policy of providing in some way, appropriate appliances for fostering and still further developing these manifested natural powers. We do not have to go very far back to recall the period when the idea of this country's meditating anything

more than mediocrity, even in industrial pursuits involving skill, would have been a practical misconception of American capabilities. Our life-long evidences of European superiority of endowments in the line of professional art which have come to us through the medium of excessive importation, and observation of American travellers on a continent almost over-burdened with works of art, dissuaded our people from aspirations in respect to artistic attainments in any such degree as to inspire hope of ever vieing with the more advanced nations in other than un-artistic products.

But within the last ten or fifteen years we have had occasion to note gradual improvement in taste, and decided progress in art-culture. This change is so radical and pervading, and with all so assuring of future higher attainments in modern art, that the public should be eager to supply every possible accessory to encourage and stimulate these manifested inherent art-capabilities.

Our first aim will necessarily be to foster technical art-education with the view to advance industrial and mechanical pursuits, in which the interests and welfare of the masses are so essentially identified. This will demand the inauguration of schools to compass the industrial sciences, since we have surely attained the period when American commerce and manufactures will be extended and prosperous in exact ratio to the sufficiency of the methods adopted to advance them.

Our country is far richer in private collections of art objects than it was twenty-five years ago, and this may be regarded as an effective agency in the general improvement in taste to which we have referred. These collections have recently been notably diverted towards pottery, and this has resulted in a very remarkable popular taste for drawing-room and table adornment with choice specimens of artistic and grotesque ceramics.

The second "Loan Exhibition in aid of the Society of Decorative Art" which has just closed in New York, was composed of private collections of works of art both foreign and American, together with the amateur productions of those connected with the society, for whose benefit the exhibition was arranged. Those who visited that collection gained some knowledge of the magnitude of works of art belonging to private collections, and

chiefly identified with one American city. The occasion was one of abounding interest to all lovers of art, and was well calculated to awaken in the public mind a sentiment conducive to art culture, and the development of a taste for art pursuits, in their diversified relations to the manufacturing industries of the country.

The study of and contact with objects of beauty have a wondrously refining and elevating influence upon the mind, and they insensibly beget and foster a cultivated taste and appreciation of beautiful works of art, which previously awakened no pleasurable emotions.

In a lecture delivered in a Yorkshire manufacturing town, John Ruskin says: "Beautiful art can only be produced by people who have beautiful things about them, and leisure to look at them; and, unless you provide some elements of beauty for your workmen to be surrounded by, you will find that no element of beauty can be invented by them. * * * And all the lecturings and teachings and prizes and principles of art in the world are of no use, so long as you don't surround your men with happy influences and beautiful things. It is impossible for them to have right ideas about color, unless they see the lovely colors of nature unspoiled; impossible for them to supply beautiful incident and action in their ornament, unless they see beautiful incident and action in the world about them. Inform their minds, refine their habits, and you form and refine their designs; but keep them illiterate, uncomfortable, and in the midst of unbeautiful things, and whatever they do will still be spurious, vulgar, and valueless. * * * Considering the materials dealt with, and the crude state of art knowledge at the time, I do not know that any more wide or effective influence in public taste was ever exercised than that of the Staffordshire manufacture of pottery under William Wedgwood; and it only rests with the manufacturer in every other business to determine whether he will, in like manner, make his wares educational instruments or mere drugs of the market."

The influence of such an art master as John Ruskin upon the education and training of the industrial classes of a nation, is incalculable. The above extracts from his "Two Paths," are opportune and pertinent to what we conceive to be an essential

need at the present stage of the pottery industry, viz., a collective display of fine art ceramic products consisting of specimens illustrating the highest development of art in design and decoration, to be rendered serviceable in elevating the taste and skill of pottery operatives and designers. This is the most approved modern appliance to advance the artist's work.

It is everywhere observable that a very great change has taken place in this country in respect to taste and appreciation of everything pertaining to art, and art pursuits, and the most hopeful aspect of this change is, that it pervades both sexes and all classes, and there seems no longer to exist misgivings as to the possession by our people, of diversified artistic capabilities of a high order, and worthy of the best methods for their development and cultivation.

Again, we think the occasion justifies an importunate appeal to the citizens of New Jersey in behalf of a public art collection to embrace not only finished works of art, but models of form and decorative designs, adapted to, and ultimately to compass the whole range of art culture, and industrial pursuits.

The primary purpose we entertain in respect to this proposed museum, or collection of works of art, is not strictly speaking for an educational agency, but to cultivate a taste for art, and to afford an opportunity for inquiring students, and those who are practically engaged in art, or industrial occupations involving the expression of art-sentiment in their workmanship, to inspect and study models of form and decoration, illustrative of more advanced schools and periods, for self-improvement. Such an institution would possess great value, but its utility would be vastly enhanced, if an art school for systematic study and training could be combined with it, at the outset. The requirements of the pottery industry will never be met in their fullness until this educational auxiliary is provided.

A reference to England's surprising art achievements in a brief period subsequent to 1851, shows the superiority of the South Kensington Museum system of instruction, over the French and German. This superiority was recognized by the French in 1863 in the appointment of a commission to investigate the English system, which is represented to have nearly doubled the manufactured products of the kingdom. The result

of this investigation was the adoption, and engrafting upon the French system of industrial science, schools of art, upon the Kensington plan. To illustrate the commercial value of art education, we quote from Walter Smith's "Art Education," the following, which has reference to the Kensington Museum :

"Beginning with a grant of \$50,000 to purchase works from the exhibition of 1851, and an annual appropriation, which has increased every year, Mr. Cole has created a museum of industrial art which is one of the joys of the whole earth. Of course, economists would sometimes start up in the House of Commons and oppose the grants to art, as a waste of public money, and oppose the appropriations to the museum, as extravagant outlay which would bear no return. I say it with shame, also, that others opposed the expenditure upon the museum. Mr. Cole's answer to his critics was unique, and, since it was given, no one has yet had the temerity to find fault. It was this: 'Gentlemen, the nation has expended a certain amount of money in buying up majolica plates and Cellini vases, cabinets and examples of art workmanship in every material and style and period. If it repents of its bargain, I am prepared to find a responsible committee to take the collection off the nation's hands at the price given for it, and pay interest, and compound interest, for the money which has been sunk.' This set the economists a-thinking and inquiring. Since then little has been heard of waste of public money by investing in objects of art for public purposes."

The diversity and prominence of the industries of New Jersey would seem to impose upon her citizens and authorities, concurrent consideration in respect to methods for promoting their prosperity and subserviency to the public welfare. There is a steady approximation of these industries to a higher development and advance in the artistic scale, which is elsewhere regarded as tending to promote social and material elevation.

We think it must be apparent to all who have given any thoughtful attention to the subject of enhancing the value of our manufactured products through the diffusion of skill and taste, that there is a new industrial era upon us demanding a high grade of industrial education.

Professor Langl, of Vienna, in his "Modern Art Education" says: "Manufactures involving skill and taste are more desira-

ble than rude ones, because, in the first place, they command a higher price in the market, if we regard only the time and labor bestowed upon them. Brawn against brain in any field of labor never did successfully sustain itself. What can be done by a machine, or by an animal, that is, by mere brute strength, we never esteem as we do work that can be done only by the mind; while, therefore, the rude laborer earns his dollar, the dextrous laborer earns two, and the skilled laborer three. Yet it costs just as much to support in health and comfort the rude laborer as it does the one who is skillful and artistic."

How our State is to become the happy possessor of such an institution as we have prefigured, must be committed to others than ourselves to determine. We have no hesitation, however, to intimate in an undertone, that there is an opportunity here presented for unstinted individual benefactions of an attractive character, with unlimited possibilities in its bearings upon public education. It would scarcely be contemplated to appropriate public funds to the establishment of a central department of science and art, which did not embrace within its scope of educational appliances, all branches of industry compatible with art influences.

The usefulness of an institution having prospective relations to all classes and grades of artisans, we think would readily enlist public attention and inspire public confidence to such a degree as to attract continual accessions of appropriate gifts and bequests, so that even an humble nucleus of works of art and appliances for instruction in industrial art, would ere long achieve results scarcely contemplated by its promoters.

It would exceed our limits and be no easy task, to forecast all the benefits and influences which would flow from a comprehensive and thoroughly equipped school of design, established in this State. We will, however, take occasion to say that such an institution would afford an invaluable opportunity for our State manufacturers of products involving the art element—such as pottery, silks, delaines, prints, furniture, leather, &c.—to acquire for themselves and their artisans technical and artistic instruction appropriate to their respective departments of industry, of a character not otherwise attainable, but in a limited degree. We all know how dependent these industries are for suc-

cess upon artistic resources pertaining to design and decoration, and the skillful adaptation and manipulation of raw materials, all of which acquirements are centered in a well organized school of design.

Furthermore, we desire to refer to another class which may be numbered by thousands who would unquestionably hail as the greatest boon to their sex, the establishment of a school of design to compass the professional training of art-masters and instructors. We affirm that there never has been a period when the attention of the public is more urgently demanded in behalf of *remunerative* employment for the female sex, than the present. If it were needful we could enforce this affirmation with painful illustrations.

In referring to general education, Professor Walter Smith says: "I have discovered in my experience, and from my own continued observations, that the peculiar phases of mind and disposition which are absolutely necessary for the possession of teaching-power are more frequently to be found in women than in men. This would point in the direction of utilizing much human life now not profitably occupied, by educating and employing ladies as teachers of art. There are also many branches of art workmanship, requiring delicate fingers and native readiness of taste, which could be better performed by women than men. It seems to me that an infinite amount of good would be done by opening up the whole field of art instruction and art workmanship to the gentler sex." From the same source we learn that there are more female than male pupils at South Kensington, and that subjected to the same tests and examinations, the success of the female pupils is greater than that of the male students.

In our country the last few years have been marked by an unusual enthusiasm in art, and very great progress in art-culture is a noticeable result of systematic training under both public and private auspices. Collections of student and amateur specimens in some of the cities, have displayed remarkable art-power in design, and painting from natural objects, and it must be stated that a very large preponderance of these meritorious productions, are from female hands.

It is obvious that art pursuits are within the range of occupa-

tions peculiarly adapted to the female sex, and that in some lines of industrial art, their delicate touch and expertness in all manipulating processes, coupled with the same amount of training, renders their services paramount to the male sex. It is so rarely their privilege to embark in a pursuit upon an equality in respect to product and compensation with the male sex, that a benevolent aspect of intense interest is thereby imparted to the educational question we are advocating.

To show the bearings of importations of pottery products upon the pottery industry in the United States, will surely enhance the interest in the general subject, and tend to corroborate our somewhat sanguine presentation of that industry.

In the first place, assuming that hitherto the American potters have chiefly encountered *English rivalry*, it will best illustrate the result of that rivalry to set before our readers the imports of *earthenware* from England, for a series of years.

The following is a transcript of the Liverpool shipments of *packages* of earthenware to American ports, from 1869, to the 1st of last October:

1869.....	104,954	1874.....	65,164
1870.....	97,220	1875.....	66,209
1871.....	103,669	1876.....	60,193
1872.....	104,185	1877.....	69,951
1873.....	77,528	1878 (nine months).....	56,180

With the exception of two years, it will be observed there was a very large falling off in the number of packages, an average of about 31 per cent. It will not be questioned we presume that this 31 per cent. of diminished imports was occasioned by the successful manufacture of earthenware in this country, and from which the deficit was supplied.

And when we consider there has been an increase of population in the United States within the last decade, and a corresponding consumption of earthenware, it is fair to assume that this per cent. of diminished imports, would thereby be increased at least 40.

The recent convention of the "United States Potters' Association," held in Trenton, enables us to present another aspect of importations in its relation to the home product. The committee

on statistics made the following report in respect to "Importations of earthenware and china from official sources for the last fifteen years, ending June 30th, 1877:

" 1863	\$2,271,247
" 1864	2,535,788
" 1865	2,184,683
	"\$6,991,718

"The above being 'war times,' there was no consumption South.

" 1866	\$3,012,591
" 1867	5,308,269
" 1868	4,007,213
" 1869	4,372,607
" 1870	4,388,771
" 1871	4,681,376
	"\$25,771,827

"Six years' average, \$4,295,304.

" 1872	\$5,270,785
" 1873	6,015,925
" 1874	4,882,355
" 1875	4,265,210
" 1876	4,304,808
" 1877	3,741,720
	"\$28,480,803

"Six years' average, \$4,746,800.

" For 1878.....	\$4,051,786
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"It will be noticed that the average value of goods imported during the past six years (\$4,746,800) is one million in excess of the last year's importations (\$3,741,720)."

The distinction between this and the preceding table, is that that embraces both earthenware *and china*, inclusive of English, French and German wares of every description. The report of the association continues:

"From the figures above it will appear that the American product of earthenware and china during the past ten years has

not only kept pace with the increase in population, and its corresponding consumption of wares, but that during the fiscal year, 1876 and 1877, ending June 30th, has reduced the average importations over 20 per cent. I estimate the American production of White Granite and C. C. and China for 1877 to be \$2,975,000. The production of the Yellow and Rockingham manufacturers is not put in this estimate, because so few belong to our association, and most of them are not known by us."

We learn from the report also a most significant fact illustrated by tables too long for insertion here, that granite wares are sold to-day "under a 40 per cent. tariff, 18 per cent. cheaper than they were in 1860, under a 25 per cent. tariff," a result greatly intensified by the consideration that the sizes and quality of the wares now produced are vastly superior to those made in 1860.

American industrial exploits ranging through the last twenty years, leave no room for misgivings in unbiased minds, in respect to the virtual displacement at no distant day, of foreign ceramic products, not only from American markets, but from many other non-producing markets, accessible to the Western Continent.

THE FLAX INDUSTRY.

The cultivation of flax for the fibre in this State is a flagging industry only because it does not receive the attention its importance demands. Previous to 1860 the largest product of the State for one year was forty-eight thousand six hundred and fifty-one pounds. *It will be remembered that in 1863 Congress appropriated \$20,000 to encourage its cultivation,* with the view to substitute it for cotton, pending the war. This brought our State's product up to two hundred and thirty-four thousand and sixty-one pounds, and in the United States, from four million seven hundred and twenty thousand one hundred and forty-five in 1860, to twenty-seven million one hundred and thirty-three thousand and thirty-four pounds in 1870, which forcibly illustrates the advantages of bounties to stimulate production.

The cultivation of flax has been retarded no doubt by the necessity of employing to such an extent hand labor in all the processes of its production. But this obstacle, as in the case of many other industries both agricultural and mechanical, is gradually being overcome. As improved methods are developed to cheapen production in every sphere of industry, it behooves us to avail ourselves of their advantages with as little delay as possible.

What is essential to our success in soil industries equivalent to achievements in other countries, is improved systems of husbandry. We should therefore hail with the deepest interest and delight evidences of progress in all departments of industry.

The chief purpose of this brief reference to the flax industry is to acquaint agriculturists especially, with the probable perfection of a new machine to separate the fibre from the shive. If the invention we refer to proves a success, there would seem to be a new future for flax culture in our country. We have had some knowledge of this machine for months past. About two weeks

ago we received a letter from Philadelphia asking if we could furnish some rotted flax with which to experiment in the extraction of the fibre. The request was complied with after some delay in procuring the straw in the required state. A few days after the bundles went forward, a sample of cleaned flax was returned with a note to this effect: "Please find enclosed a sample of the flax sent by you a few days ago. * * I saw the stalks enter the machine and measured the time by two watches, and in *forty seconds* the fibre came out in the condition which we lay before you." Among the witnesses present were two experts from the North of Ireland whose commendation of this performance was extremely "warm," and "they bid me say to you that any land which produced such a growth of flax as you sent ought not to lie idle."

The *Franklin Institute*, of Philadelphia, appointed a committee to examine this machine and report upon it, which we understand has been done, and the report, although not made public yet, is said to be highly commendatory of the working of the machine.

Here is a hopeful monition addressed to us in furtherance of an important State industry, practically emanating from a country which grows forty thousand tons of flax per annum, and in 1874 imported one hundred and eighteen thousand tons from Russia and Holland chiefly, and exported in piece linens \$40,000,000 in value, \$18,000,000 of which came to the United States. We are not informed how these Irish experts happened to be present on this auspicious occasion, but we do know that some Irish gentlemen have recently constructed what is perhaps in all its appointments, one of the finest mills in this country, in which to spin French and Holland flax until we can furnish a domestic article of equal quality. Newark and Paterson can each boast of model mills erected by foreign capitalists and manufacturers of high distinction in their respective countries, viz., Scotland and Ireland, the former spinning cotton thread, and the latter linen thread. These and other similar enterprises of foreign antecedents, are forerunners of more, and it becomes us to consider their significance. Their interest and ours coincide in the domestic production of such raw materials as have an affinity for American soils and climates.

If it were necessary we could show that the most prominent industries of France, England and Ireland attained their supremacy through governmental aid extended at their undeveloped stage in the form of bounties. The United States Government recognized the principle in 1863, and in that instance, the utility of bounties had a notable illustration. It is no disparagement in this case to say that the flax bounty tendered by Congress, was incited by an unusual emergency.

A similar necessity for raw material arising from another cause, existed in Ireland, when in 1841 a "Society for the Improvement of the Growth of Flax," was organized under the patronage of the government. After the spinning of flax by machinery was successfully introduced in Ireland, regular and adequate supplies of the raw material could not be obtained from the continent, hence an impetus must needs be given to home cultivation. The result is known.

It is obviously no less an injustice to our labor classes, than to the manufacturing and commercial, to import raw materials and other products which can be advantageously produced in our own country. It surely is not wise public policy to refrain from multiplying pursuits which are clearly adapted to our inherited conditions of climate and soils, together with unlimited mechanical capabilities. *It seems sometimes as if we forget the dimensions of our country, and that we have not much less than fifty millions population to maintain, and know not how soon it will be sixty millions. It is not chimerical to forecast the needs and possibilities of the future of this country.*

This appeal has relations to the public welfare, otherwise it would not be entitled to a moment's consideration in this report. It seems to us that the adverse stereotyped view of *bounties*, viz., that whatever is worthy of adoption and prosecution in this country, will ultimately be achieved by dint of the irrepressible qualities of our people, has been entertained to our industrial detriment. It is not an unnatural presumption with which to confront legislation in respect to bounties, but in our view it is destitute of potency, especially at the present juncture when the country is so signally entering upon a most auspicious industrial and commercial career, demanding the highest attainments in the production of raw material with which to diversify and aug-

ment our manufacturing pursuits. The encouragement we solicit from the State is embodied in the bill which will be found below, and we bespeak as a result of its adoption, greatly accelerated success in the production of three fibres named therein—flax, jute and ramie.

The policy involved in this question is susceptible of a mathematical illustration. We will assume that an appropriation and expenditure of \$10,000 or \$15,000 by the State, will successfully introduce these industries, or either one of them, within five years; and without such aid the same degree of success would not be achieved in less than ten years, would it be wise to withhold the bounty and rely upon farmers and mechanical experimentors to occupy ten years and perhaps expend two or three times the sum of the bounties in solving their industrial problems. We know full well what bounties have achieved on the other side of the ocean. Why should they be any less serviceable in the enlargement of industries, on this side?

It should not be overlooked in the consideration of this question, that the State pays no money until the product is grown and the industry practically established, an achievement which secures lasting benefits to the State at large.

It must be apparent to all that the times are not propitious for experimental enterprises of any sort. Men with ample means undertake new things with great reluctance, even when the prospective benefits are to be shared exclusively by themselves. How conspicuously timid capitalists have been and still are, in respect to untried ventures! These industries if developed at all by individual enterprise, must depend upon farmers and inventors for the consummation, who for the most part have not much capital to devote to experimental purposes in the absence of hope of securing a monopoly.

Since the revival of flax culture in this country, for the sake of the filament, is obviously dependent upon *successful mechanical scutching*, we sought an opportunity to witness the working of the machine of which mention has already been made. Though the straw was damp and not well rotted, and the machine not in its best working trim, the performance was extremely satisfactory. The straw was grown in New Jersey, and we saw it passed through the machine, and the shive effectually removed

from the fibre in less time than one minute. We subsequently showed this fibre to some gentlemen who use between fifteen and twentytons of American and French flax per day in this country and in Ireland, and they assured us that it was a good quality of the medium grade, and that close attention to the growth and manipulation of the straw, would greatly improve and add to the value of the product. As piece linens will undoubtedly before very long be wove in this country, and the grades below medium require flax of about this quality, there would seem to be nothing but the question of *cost unsolved*, in respect to the production of American flax.

The quality of flax fibre is everywhere regulated, of course, by the soil, cultivation, climate, and treatment after it is grown. The grades grown in Ireland are from the medium down, but on the continent the higher grades are produced by the utmost care in the use of fertilizers, drainage, subsoiling, weeding and by various methods of treating the straw and separating the fibre. In France and Belgium, and sometimes in Ireland, the straw is often put into stacks and kept three and four years before it is scutched. In quality, the Belgium flax exceeds all other, reaching not unfrequently \$20 and \$30 a pound, to be worked into the Brussels and Mechlin laces.

In respect to the preparation of the stalks for obtaining the fibre, there does not appear to be much uniformity. A degree of fermentation is everywhere conceded to be necessary to facilitate the disintegration of the foreign substance. In Ireland the most common process is to put the sheaves of straw into pools or tanks of water, where they are left until, by frequent tests, the fermentation of the stems is found to be accomplished, when the sheaves are removed and thinly spread upon a prepared surface to dry. When thoroughly dried the straw is rebundled and put into stacks well thatched, or into well roofed barns, where it is often left undisturbed for years. In this condition it becomes a merchantable article, and hence in superabundant seasons, this system of stacking may be made available to maintain remunerative prices. It will thus be observed that the whole process of producing flax is to be modified and controlled by local conditions.

THE HEMP INDUSTRY.

This product is as well known and has as wide a range for successful cultivation as flax, and in comparison with it, has only a secondary prospective value. The scutching machine we have spoken of is even better adapted to hemp than it is to flax, hence its consideration has an appropriate place here.

Hemp has become a Western and Southwestern product, but it is no less adapted to the strong soils of the North and East, than it is to Northern Europe, where it is grown more extensively than anywhere else. In Kentucky and Missouri one thousand pounds of lint per acre is produced, which is more than the acreage yield of flax. A gentleman who has devoted twenty years to the culture of hemp in Kentucky and Illinois, has obtained as high as 1380 pounds per acre. Kentucky has been the leading State in the production of hemp, but Illinois has the preference of the gentleman referred to. He says Illinois could supply the world with this fibre, if the farmers would turn their attention to it.

As in the case of flax, manual labor to produce hemp has no doubt retarded its production in this country, but we must view these industries in a different light, since their prosecution is rendered more feasible than formerly by improved methods of culture and treatment. This is one of the raw materials which is no less adapted to our limestone soils than to those of Missouri, and for which there is an increasing demand, for home consumption.

To produce the best results in fibre, the seed should be sown thickly to promote a full growth without branches. For a seed crop, the sowing should be in drills, and afterwards thinned out to afford the fullest development of the plants. Both male and female plants may be utilized for fibre, but the latter must remain uncut a few weeks longer for the seed to mature.

In the West, the impression respecting the exhausting nature

of this crop, has been dissipated to a very large degree by attention to more systematic rotation and fertilization. In Missouri the farmers regard its effect upon the soil akin to that of clover, and claim that its deep roots bring from the subsoil valuable elements, and moreover that it derives a good degree of sustenance from the atmosphere. Instances are referred to of hemp having been planted twenty-five successive years in the same fields producing an average of eight hundred pounds of clean lint.

Hemp possesses special purifying properties to the soil, and has been used in rotation with flax and other crops, to exterminate weeds. The growth of hemp is so much more luxuriant and vigorous than flax, it is said to be very destructive to the weeds natural to the soil. The harvesting and treatment of hemp is similar to that of flax and other fibrous plants, and unquestionably the restoration of these productive industries at a period when public attention is intent upon the discovery of new methods and processes to cheapen production in all departments of enterprise, will accelerate their practical subserviency to the general public welfare.

A bill similar to the following, was submitted to the last Legislature, and while it received favorable consideration from the committee, in the hurry of the closing hours it failed of passage. There can be but little doubt but that its passage would stimulate the growth of fibre producing plants. It has this merit, however, that if it fails in effect, the State cannot be called upon to pay anything.

An act to encourage the production and treatment of fibres in this State.

WHEREAS there are ample assurances that the soil and climate of this State are adapted to the cultivation of jute, ramie, flax, hemp and various other fibrous plants and grasses, which are extensively grown in other countries, and largely imported into the United States; *and whereas*, the development of new productive industries are of essential benefit to the public welfare; therefore,

1. BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey*, That with the view to stimulate individual effort in the cultivation of fibrous plants, that the Treasurer of this State be hereby authorized to pay the following bounties, upon vouchers duly receipted by the payee, setting forth the quantities and prices of the products grown by him or them, whose affidavit of their truthfulness shall be first affixed to the said vouchers and be attested by the Clerk of the county in which the products are grown; and moreover the said vouchers shall be certified by the chief of the Bureau of Labor and Industries of this State; for every *one hundred pounds* of American or Indian *jute stalks* for paper pulp or fibre grown in this State, not less than two and a half feet in length, *twenty-five cents*; for every *pound* of disintegrated *jute staple* not less than eighteen inches in length, *one and a half cents*; for every pound of best quality of *jute staple*, not less than two feet in length, *two and a half cents*; for every *one hundred pounds* of *ramie or china grass stalks* grown in this

State, not less than two feet, *fifty cents*; for *every pound of crude ramie*, not less than twelve inches in length, *five cents*; for *every pound of disintegrated ramie*, not less than twelve inches in length, *ten cents*; for *every one hundred pounds of flax stalks*, of the ordinary length, *thirty-five cents*; for *every pound of decorticated or cleaned flax* of a merchantable quality, *three cents*; for *every one hundred pounds of hemp stalks*, of the ordinary length, *twenty-five cents*; for *every pound of decorticated or cleaned hemp*, of merchantable quality, *two cents*; *provided*, that the bounties hereby authorized shall cease on the first day of January, eighteen hundred and eighty-three; *and provided further*, that in no event shall the total sum expended in the form of bounties under this act, exceed the sum of ten thousand dollars.

2. *And be it enacted*, That it shall be the duty of the Chief of the Bureau of Labor and Industries to certify the vouchers referred to in the first section of this act, and, at the request of the Comptroller, to have the general supervision, control and decision of all questions which may arise pursuant to the provisions of this act.

3. *And be it enacted*, That the Treasurer of this State is hereby authorized to pay any money in the treasury not otherwise appropriated, pursuant to the provisions of this act.

4. *And be it enacted*, That this act shall take effect immediately.

THE CRANBERRY INTEREST.

BY DR. J. H. BRAKELEY.

If you will draw a line across our State in a southwesterly direction, beginning near Matawan on Raritan bay, and strike the Delaware a little below Camden, you will have lying to the southeast and south of this line most of the cranberry region of our State. Geologically considered, it takes in most of the upper cretaceous, tertiary and recent formations. The sphagnous swamps embraced within this area consisting of peat or muck, and the savanna lands adjoining these swamps, being a mixture of sand and peat, together with abandoned mill ponds, constitute the land adapted to the cultivation of this fruit. All the counties embraced within this area, (with a few localities outside of it,) have more or less of this kind of land. Much the largest portion, however, of the cranberry lands of our State, lies within the counties of Burlington and Ocean. As there are certain conditions which are absolutely necessary to success in the cultivation of this fruit, such as a susceptibility of being thoroughly drained, and also of being covered with water during the winter, the vicinity of sand more or less free from loam with which to cover the peat after the removal of the turf, etc., the area of good cranberry land is comparatively limited.*

A few years since cranberry culture was very remunerative, yielding from 25 to 50 per cent. on the capital invested, and frequently more than this.

The fruit then sold for from \$4 to \$7 a bushel, according to the extent of the crop. As a result, large investments were made in cranberry lands, and the acreage under cultivation greatly increased. From the statistical report, made to the New Jersey

*In regard to the quantity of unimproved lands adapted to this purpose, we have no data upon which to found a reliable calculation. Those best informed on the subject differ greatly in their estimates. Some persons whose opinions are entitled to respect, believe that not over one-fourth of the land well adapted to the culture of this fruit has been brought under cultivation. This would make the unimproved cranberry lands of our State about eighteen thousand acres.

Cranberry Growers' Association in the year 1874, carefully compiled by N. R. French, Esq., the statistician of the association, we find that there was at that time a little short of five thousand acres of improved cranberry lands in our State. The following is the estimated number of acres in each county:

	* ACRES.
Burlington.....	2131½
Ocean.....	1849½
Atlantic.....	492
Monmouth.....	242
Camden.....	130
Middlesex.....	124
Whole amount.....	4969

The cost of these lands up to the time of their coming into full bearing was about \$1,700,000. Since then from five hundred to one thousand acres have been planted in cranberry vines, which would make the number of acres now under cultivation a little less than six thousand, at a cost in round numbers of \$2,000,000. It will be borne in mind that most of this land in its natural condition has no productive value whatever—is, in most instances, swamp lands destitute of timber; and when covered with timber its annual growth is scarcely of an appreciable value, so that this interest has, within the last few years, wrested from an unproductive condition these six thousand acres, and made a large portion of them highly remunerative.

It is true, this interest has greatly suffered the last three or four years from a cause which no human foresight could have anticipated—the *rot* which has done so much injury to the crops in many sections of the cranberry region. Its cause is as yet unknown, having thus far baffled the most careful investigation which has been brought to bear upon it.

Doubtless in changing the natural condition of an unimproved peat swamp by cultivation, thus aiding Nature to produce a much larger quantity of fruit from a given amount of land, and that of a greatly improved character, we have somewhere unwittingly run counter to some one of Nature's laws; and the *rot* is the penalty inflicted. To ascertain precisely wherein we have transgressed, and to learn how to remedy our error, should be the study of every cranberry grower.

An ordinary crop of cranberries in our State is about 100,000 bushels; some years it being a little more than this, and some years a little less. Last year the crop was unprecedentedly large, amounting to 152,000 bushels. An ordinary crop in the New England States is about the same as ours, while the Western crop is very variable, ranging all the way from 40,000 bushels to 135,000 bushels. The following is the estimated crop from the three great cranberry areas of our country for the last six years, in bushels taken from the last report of Mr. French* to the Cranberry Growers' Association of our State:

	1872.	1873.	1874.	1875.	1876.	1877.
New England States, including New York.....	40,000	105,000	110,000	80,000	68,000	169,228
New Jersey.....	100,000	110,000	90,000	110,000	90,000	152,000
Western States.....	135,000	60,000	50,000	40,000	40,000	79,500
Total each year.....	275,000	275,000	250,000	230,000	198,000	400,728

These figures will give an idea of the magnitude of this interest in our country. They also reveal a very significant fact in regard to the comparative certainty of a crop in this State and in the two other cranberry centres. While with us up to the last season, the crop has varied from year to year only a few thousand bushels, in New England and the West the variation is very large. This is due mainly to the injury of early and late frosts to which they are subjected, which seldom do much injury in our State.

Some four or five years since, it became obvious to those who were aware of the large amount of land planted in cranberries, that when all came into bearing, a full crop would overstock our market. The importance of opening a foreign market became clear, and measures were at once taken by a few leading growers to effect this purpose. A stock company was organized under a liberal charter granted by our Legislature in April, 1875, under the name of the "Fruit Growers' Trade Company," and operations immediately commenced. As the proper mode of cooking

* N. R. French, Esq., the statistician of the N. J. Cranberry Growers' Association, is the senior member of the firm of French & Co., 180 Reade street, New York, a commission house of long and honorable standing, and who for years have made a specialty of the sale of cranberries both in the crude form and also prepared for table use. To his carefully compiled annual reports to the association, I am indebted for many facts herein presented.

cranberries is a culinary art not well understood, even in our own country, they thought it important to send the first abroad ready for table use, as well as in the crude form. After experimenting most carefully they settled upon a mode which has given universal satisfaction. Using only carefully assorted fruit and the best of sugar in its preparation, it is put up so as to bear distant transportation and to remain unchanged for years. The trade mark of this company is a full guarantee of the purity and excellence of all packages of this fruit on which it is placed. So this company is in a position to offer this fruit in its most delicious form, and untiring efforts have been put forth to introduce it to the different countries of Europe. They think that some progress is being made from year to year to extend its use. But as is usual in introducing a new article of food, progress in this direction is not rapid. In England, especially, the company have found great difficulty in getting people accustomed to its use. But they do not despair a final success, especially as many of our country's productions now extensively used in foreign countries, have had equally great obstacles to overcome, before they were largely introduced. There is no more healthful article of food than the cranberry, and when a bushel of cranberries can be had at the price of a barrel of apples, it is quite as economical as the latter fruit.

No portion of the world produces cranberries equal in size or flavor to those of our country. The small, acrid berry which supplies England, and of which about one thousand bushels are sold annually in Covent Garden market, London, are said to be gathered from the unimproved marshes of Norway and Sweden, and are far inferior to ours both in size and flavor. So if a foreign demand is created, our country must supply it; and as other sections are much less reliable for a crop, this supply must come mainly from our own little State.

At present, few if any new plantations are being made. The uncertainty whether a new planting will produce sound fruit or whether all or nearly all will rot before maturity, has awakened a judicious caution. And as a full crop, even when much of it rots before being gathered, causes low prices, it is clearly advisable for all who are engaged in the cultivation of this fruit, for the present, not to add to the acreage under cultivation. The

business has been and continues to be remunerative where the rot does not extensively prevail, and as this formidable disease passes away, as other similar diseases have done, in coming years, as an increased demand for this wholesome, palatable fruit arises, this industry will doubtless expand and meet whatever demand is made upon it.

Two centuries ago, one of the early settlers of our (Burlington) county, in writing to a friend in another land, whence he had been driven by persecution for conscience sake, said this "is a country that produceth all things for the support and sustenance of man. * * * We have from the time called May till Michaelmas a great store of very good wild fruits,—strawberries, *cranberries*, and whortleberries, very wholesome. Of the *cranberries*, like cherries for color and bigness, an excellent sauce is made for venison and turkies." They seem to have learned very soon the proper use of this "wild fruit of the color and bigness of cherries," but it has been left to their descendants of the sixth generation, to demonstrate how vastly productive these unsightly swamps may be made, and how large a demand among forty millions of people they were capable of supplying.

CHAPTER VIII.

RAILROAD WAGES.

CHAPTER VIII.

RAILROADS OF NEW JERSEY.

In accordance with a law of the State of New Jersey, approved March 27th, 1874, requiring annual reports to be made to the Legislature and transmitted to the Comptroller by the railroads chartered by the State, there were fifty-eight railroads which sent in returns for the year 1877.

As will appear from the reports of these fifty-eight companies, which represent 1652.67 miles of railroad within this State, there are only twenty-three railroads—757.02 miles—that are operated by their own boards of directors, and of these twenty-three railroads five—240.40 miles—have been placed in the hands of receivers.

The remaining thirty-five railroads—895.65 miles—are leased or operated by seven railroad corporations as follows:

	MILES.
*Pennsylvania Railroad Company, eleven railroads.....	337.06
West Jersey Railroad Company, three railroads.....	68.73
Central Railroad Company of New Jersey, six railroads.....	119.50
New Jersey Southern Railroad Company, four railroads.....	88.75
*Erie Railway Company, six railroads.....	70.55
*Delaware, Lackawanna and Western Railroad Company, four railroads.....	151.06
*Lehigh Valley Railroad Company, one railroad.....	60.00
	895.65

The State of New Jersey has a Commissioner of Railroad Taxation, and by careful attention to the execution of the laws governing that kind of property within the State, a large part of the annual State revenue is derived from this source. During the fiscal year, terminating October 31st, 1877, there was received from taxes from railroads, \$599,492.63, and for interest and dividends on stocks and bonds of railroads, owned by the State,

*Railroad companies chartered by other States.

\$31,010.00, making a total of \$630,502.63, while the amount received from State taxes for the same period was \$651,728.68, showing that during that year the income received from the railroads was only \$21,226.05 less than the amount received from direct taxation.

There are probably no railroads in this country better managed than those of New Jersey. The facilities for travel, upon the main lines at least, are so complete, and the speed attained so great, that universal satisfaction may be said to exist, and there would seem to be no reason why the few inquiries we propounded relating solely to the rate of wages of the employees and their hours of labor, should not have been promptly responded to by all the companies, to which they were addressed.

Although it in no way justifies the refusal of these companies in some cases, or their neglect, probably, in other instances, to comply with our request, yet it may be accounted for from the fact that twenty-two of the railroads of the State, including the main lines of travel, are leased or operated by corporations chartered by adjoining States, and from this fact probably they are not in sympathy with the work of this Bureau. It should be borne in mind, however, that almost without exception, the employees upon these leased railroads are residents of New Jersey, and thus have claims upon those who employ them to such recognition as will enable them to bear part in whatever may promote the interest of that class of citizens to which they belong.

We present below the returns of the railroads which complied with our request:

TUCKERTON RAILROAD COMPANY.

	No. men.	Pay per day.	No. of boys.	Pay per day.	Average hours worked pr day	Pay of men per month.	Average time worked in the year.
Machinists.....	1					\$65 00	
Conductors.....	2					45 to 70	
Engineers.....	3					65 00	
Firemen.....	3					30 to 40	
Brakemen.....	2					35 00	
Flagmen.....							
Station agents.....	7					25 to 50	
Section men.....	13			\$1 20			
Carpenters.....	1						
Blacksmiths.....							
Watchmen.....							
Baggage masters.....							
*Freight agents.....							
*Telegraph operators.....							
†Common laborers.....							
Crew of steamboat, not included above.....	3					25 to 50	

* Station agents. † Indefinite.

FREEHOLD AND NEW YORK RAILWAY COMPANY.

	No. of men.	Pay per day.	No. of boys.	Pay per day.	Average hours worked per day.	Pay of men per month.	Average time worked in the year.	
Machinists.....	1	\$1 62½			Ten hours		Twelve months	
Conductors.....	2	2 to 2 75						
Engineers.....	2	2 25 to 3						
Firemen.....	2	1 25						
Brakemen.....	3	1 30						
Flagmen.....		pr month						
Station agents.....	6	5 to 50						
Section masters.....	2	35 to 50 per day.						
Carpenters.....								
Blacksmiths.....								
Watchmen.....	1	1 50						
Baggage masters.....	1	1 15						
Freight agents.....								
Telegraph operators.....								
Common laborers.....	7	1 00						

HIBERNIA MINE RAILROAD COMPANY.

	No. men.	Pay per day.	No. of boys.	Pay per day.	Average hours work'd p'r day	Pay of men per month.	Average time worked in the year.
Machinists.....							
Conductors.....							
Engineers.....	1					\$65 00	12 months
Firemen.....	1					45 00	12 months
Brakemen.....	2					40 00	12 months
Flagmen.....							
Station agents.....							
Section men.....							
Carpenters.....	1	\$1 50					12 months
Blacksmiths.....	1	1 50					12 months
Watchmen.....							
Baggage masters.....							
Freight agents.....							
Telegraph operators.....							
Common laborers.....	8	1 50					12 months
Superintendent.....						100 00	12 months
Clerk or weighmaster.....						40 00	12 months

WILLIAMSTOWN RAILROAD COMPANY.

	No. men.	Pay per day.	No. of boys.	Pay per day.	Average hours worked per day.	Pay of men per month.	Average time worked in the year.
Machinists.....							
Conductors.....	1				On duty 10 1/2 hours	\$70 00	—All the time except Sunday—
Engineers.....	1				10 " "	80 00	
Firemen.....	1				10 " "	37 50	
Brakemen.....							
Flagmen.....							
Station agents.....	1					60 00	
Section men.....	2	\$1 00					
Section boss.....		2 00					
Carpenters.....							
Blacksmiths.....							
Watchmen.....	1	1 00					
Baggage masters.....							
Freight agents.....							
Telegraph operators.....							
Common laborers.....					Actual time at work, five hours.		

CAMDEN & ATLANTIC RAILROAD COMPANY.

	No. men vary according to the season.	Pay per day.	No. of boys.	Pay per day.	Average hours work'd per day	Average pay roll per month.	Average time worked in the year.
Machinists.....	8 to 14	\$1 60 to 2 50	2	60-85c	.....	\$613 00	265 days
Conductors.....	6 " 10	2 70	.....	.....	.....	522 00	236 "
Engineers.....	7 " 12	1 92 " 3 09	.....	.....	.....	665 00	236 "
Firemen.....	5 " 11	1 70	.....	.....	.....	316 00	205 "
Brakemen.....	11 " 25	1 40 " 1 70	.....	.....	.....	625 00	189 "
Flagmen.....	9 " 11	1 15 " 1 92	.....	.....	.....	390 00	295 "
Station agents.....	14	70 " 3 00	.....	.....	.....	705 00	365 "
Section men.....	26 " 55	1 00	.....	.....	.....	1,350 00	289 "
Carpenters.....	10 " 19	2 00 " 2 75	1	\$1 50	.....	635 00	181 "
Blacksmiths.....	4 " 8	1 50 " 2 62	.....	.....	.....	264 00	137 "
Watchmen.....	8	1 33 " 1 50	.....	.....	.....	317 00	365 "
Baggage masters.....	2 " 9	1 33 " 2 11	.....	.....	.....	190 00	134 "
Freight agents.....	1	1 92	.....	.....	.....	50 00	312 "
Telegraph operators.....	2	38 " 2 70	.....	.....	.....	80 00	312 "
Common laborers.....	16 " 75	1 00 " 1 50	.....	.....	.....	850 00	104 "
Painters.....	2 " 8	2 25 " 2 75	.....	.....	.....	206 00	134 "
Ferry hands.....	20 " 25	1 50 " 2 57	.....	.....	.....	1,356 00	314 "
Horse cars.....	18	1 50 " 2 17	.....	.....	.....	165 00	90 "
Express drivers.....	4 " 8	1 75 " 2 00	.....	.....	.....	250 00	228 "

CENTRAL RAILROAD OF NEW JERSEY.

	No. men.	Pay per day.	No. of boys.	Pay per day.	Average hours worked per day.	Pay of men per month.	Average time worked in the year.
Machinists.....	178	\$2 10	.....	.....	.....	.....	.....
Conductors.....	61	.....	.....	.....	.....	\$80 00	.....
Engineers.....	101	.....	.....	.....	.....	90 00	.....
Firemen.....	93	.....	.....	.....	.....	60 00	.....
Brakemen.....	260	1 80	.....	.....	.....	.....	.....
Flagmen.....	158	.....	.....	.....	.....	38 00	.....
Station men.....	311	.....	.....	.....	.....	35 00	.....
Station agents.....	115	.....	.....	.....	.....	65 00	.....
Section foremen.....	63	.....	.....	.....	.....	50 00	.....
Section men.....	550	1 00	.....	.....	.....	.....	.....
Carpenters.....	128	1 80	.....	.....	.....	.....	.....
Blacksmiths.....	38	2 10	.....	.....	.....	.....	.....
" helpers.....	38	1 25	.....	.....	.....	.....	.....
Watchmen.....	22	.....	.....	.....	.....	45 00	.....
Baggage masters.....	16	2 10	.....	.....	.....	.....	.....
Telegraph operators.....	44	.....	.....	.....	.....	50 00	.....
Common laborers.....	134	1 25	.....	.....	.....	.....	.....
Painters.....	24	2 10	.....	.....	.....	.....	.....
Ferry men.....	112	.....	.....	.....	.....	65 00	.....

FREEHOLD & JAMESBURG AGRICULTURAL RAILROAD.

	No. men.	Pay per day.	No. of boys.	Pay per day.	Average hours worked per day.	Pay of men per month.	Average time worked in the year.
Machinists.....	.....	.....	.....	.....	.....	.....	.....
Conductors.....	5	.....	.....	.....	.....	\$55 00	Full
Engineers.....	3	.....	.....	.....	.....	80 00	Full
Firemen.....	3	.....	.....	.....	.....	50 00	Full
Brakemen.....	4	.....	.....	.....	.....	35 00	Full
Flagmen.....	.....	.....	.....	.....	.....	.....	.....
Station agents.....	7	.....	.....	.....	.....	45 00	Full
Section men.....	15	\$1 00	.....	.....	.....	.....	.....
Carpenters.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths.....	.....	.....	.....	.....	.....	.....	.....
Watchmen.....	.....	.....	.....	.....	.....	.....	.....
Baggage masters.....	2	.....	.....	.....	.....	35 00	Full
Freight agents.....	.....	.....	.....	.....	.....	.....	.....
Telegraph operators.....	2	5 00	Full
Common laborers.....
Laborers at station.....	3	35 00	Full
Clerks.....	2	55 00	Full

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CHAPTER IX.

MISCELLANEOUS.

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CHAPTER IX.

MISCELLANEOUS.

We present under this heading the statutes of New Jersey, relating to the better securing of wages to workmen and laborers; the employment of children, and compulsory education, with a small group of papers and tables, all of which possess a public interest and bear upon topics embraced in this, and possibly in future reports.

We repeat our conviction that the employment and education of children is entitled to a place in the public regard scarcely second to any other conceivable, in their relations to progress and permanent prosperity, irrespective of their bearings upon social elevation of the industrial classes. We have therefore deemed it advisable to quote existing laws of our State relating to these subjects, with a view to awaken thoughtfulness in reference to the economic as well as social value, of universal education.

The paper on the bearings of a "Trade Education" upon the "cause of crime," is strikingly suggestive and effectively exemplified. It is in harmony with previous enunciations in this report, and should not fail to enlist the attention of all who are intent upon the amelioration and improvement of the class distinctly mentioned.

Another phase of forest propagation is unfolded in "Forest Corporations," which embodies practical co-operation in a new field.

There is no lack in our time of expedients and modes of advancing the material interests and prosperity of the country. The expansion of our mechanical and industrial arts to achieve accumulations of wealth, and supply employment to our otherwise surplus population, should have no secondary considera-

tion, but be uppermost in all minds until we have attained maximum success in those pursuits.

The table of prices of staple commodities in use by all households may be studied with profit. By comparison of prices of labor for the corresponding periods, with the cost of articles of consumption, the conclusion will be reached that the general average prices of labor for the past year, were more remunerative than it was at some of the dates indicated. It must not be forgotten that the adequacy of remuneration for labor is to be determined by its purchasing power at the period of its performance.

The concluding tables taken from the United States census of 1870, constitute an interesting exhibit by counties and otherwise, of our manufacturing industries, relating also to occupations.

PAYMENT OF WAGES TO WORKMEN.

An act for the better securing of wages to workmen and laborers in the State of New Jersey. Approved April 14th, 1864.

3. Sec. 1. That it shall not be lawful for any iron master, foundryman, collier, factoryman, employer, or company, their agents or clerks, to pay the wages of workmen or laborers by them employed, in either printed, written or verbal orders, except for the payment of money, upon any storekeeper or storekeepers, or other dealers in merchandise or other articles, whether connected in business with the said iron master, foundryman, collier, factoryman, employer or company or not; any iron master, foundryman, collier, factoryman, employer or company paying to the said workman or laborer so as aforesaid by him employed, or authorizing their agent or agents or storekeeper so to do as aforesaid, shall forfeit the amount of said pay or any part of the wages of said workman or laborer given in orders upon any such store, except as aforesaid, or any orders so given or paid, and the same shall not be offset against the

wages of said workman or laborer, but he shall be entitled to recover the full amount of his wages as though no such order or orders had been given or paid; and no settlement made with such employer shall bar such action until after the lapse of six months after such settlement.

4. Sec. 2. That the provisions of this act shall extend to all seamstresses or females employed in factories or otherwise.

5 Sec. 3. That this act shall be taken and deemed to be a public act, and take effect on the fourth day of July, eighteen and sixty-four, except in the counties of Morris, Sussex, Somerset, Middlesex, Monmouth, Burlington, Warren, Ocean and Hunterdon, which counties are specially excepted from the provisions of this act; and excepting, also, the county of Essex, in which said county this act shall take effect on the fifth day of January, eighteen hundred and sixty-five.

An act for the better securing of wages to workmen and laborers in the State of New Jersey. Approved March 9, 1877.

1. That it shall not be lawful for any person or corporation in this State to issue for payment of labor, any order, or other paper whatsoever, unless the same purport to be redeemable for its face value, in lawful money of the United States, by the person giving or issuing the same; *provided, however*, nothing in this act contained shall be held to prevent any employer from making any deduction for money due him from any laborer or employee.

2. That if any person or corporation shall issue for payment of labor any paper in violation of the first section of this act, he, she or they shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not to exceed five hundred dollars, at the discretion of the court.

HOURS OF LABOR AND EMPLOYMENT OF CHILDREN.

An act to limit the hours of labor, and to prevent the employment of children in factories under ten years of age. Approved March 18th, 1851.

17. Sec. 1. Labor performed during a period of ten hours, on any day, in all cotton, woolen, silk, paper, glass, and flax factories, and in manufactories of iron and brass, shall be considered a legal day's labor.

18. Sec. 2. Hereafter no minor engaged in any factory, shall be holden or required to work more than ten hours on any day, or sixty hours in any week; and that hereafter no minor shall be admitted as a worker under the age of ten years in any factory within this State; that if any owner of, or employer in any factory shall knowingly employ any such minor, or shall require any minor over the age of ten years to work more than ten hours on any day, or sixty hours in any week, he shall be adjudged to pay a penalty of \$50 for each offence, to be sued for and recovered, in any action of debt, in the name of the overseer of the poor of the township in which such minor may be employed, together with costs of suit, and for the benefit of such minor.

Supplement—Approved February 19th, 1852.

19. Sec. 1. That the word factory, where it occurs in the second section of the act to which this is a supplement, shall be construed to mean any building in which labor is employed to fabricate goods, wares, or utensils.

Supplement—Approved April 21st, 1876.

20. Sec. 1. That no owner of or employer in any factory shall be adjudged or liable to pay any penalty under the act to which this is a supplement, for employing any minor over the age of sixteen, for the work done or to be done in said factory, and allowing such minor to work under such employment exceeding the time mentioned in the act to which this is a supplement;

but in no case shall any minor be employed at an age less than that prescribed by said act; *and provided*, that no such employment shall be compulsory, and the minor or the parent or guardian of such minor may at any time, by giving the customary notice prescribed in such factory, end such employment or any control in relation thereto different from that permitted by the act to which this is a supplement.

COMPULSORY EDUCATION.

*Supplement to an act to establish a system of public instruction.
Approved April 9th, 1875.*

103. Sec. 1. That every parent, guardian or other person having control and charge of any child between the ages of eight and fourteen years, shall cause such child to attend some public or private school, at least twelve weeks in each year, six weeks at least of which attendance shall be consecutive, or to be instructed at home at least twelve weeks in each year, in the branches of education commonly taught in the public schools, unless the physical or mental condition of the child is such as to render such attendance inexpedient or impracticable.

104. Sec. 2. That any person failing to comply with the provisions of this act shall, on written notice of such failure from the district clerk of the school district, or the person designated by the board of education of the city where such offence has occurred, forfeit for the first offence, and pay to the township collector or city treasurer, the sum of \$2; and after such first offence, shall, for each succeeding offence in the same year, forfeit and pay to the township collector or city treasurer, the sum of \$3 for each and every week, not exceeding twelve weeks in any one year, during which they, after written notice as aforesaid, shall have failed to comply with the provisions of this act.

105. Sec. 3. That it shall be the duty of the district clerk of each school district, and of some person in each city to be selec-

ted by the city board of education, to report to the township collector of the township, or city treasurer of the city where the offence has occurred, the names of all parents, guardians or other persons who fail to comply with the provisions of this act; and the officer to whom such report is made, shall proceed to collect the penalties imposed by this act, in any court of competent jurisdiction, in the county in which such city, town, township or school district may be situated; the said penalties, when paid, to be added to the public school money of said school district in which the offence occurred; *provided*, this law shall not be operative in those school districts of the State where there are not sufficient accommodations to seat the children compelled to attend school under the provisions of this act.

106. Sec. 4. That all acts and parts of acts inconsistent with this act, be and the same are hereby repealed, and this act shall take effect immediately.

THE LACK OF A TRADE-EDUCATION AS THE CAUSE OF CRIME.

BY CHARLES F. THWING.

[*From The Christian Union, October 30th, 1878.*]

The statement is constantly made that intemperance is the cause of nine-tenths of the crime committed in this country. But an examination of the reports of the prisons of the United States proves that the influence of rum in exciting to crime is greatly exaggerated. That its influence in promoting lawlessness is great—very great—cannot be doubted; but that it is as great as usually represented cannot be proved. To the lack of a trade-education must be attributed much of the crime which is commonly attributed to liquor-drinking. Of four hundred and eight convicts in the Michigan state prison 72 per cent. are, or were, addicted to the use of liquor, but 60 per cent. have no trade. Of four hundred and eighty-nine prisoners confined in

an Iowa penitentiary three hundred and five are without a trade-education. In the prison of Minnesota are two hundred and thirty-five convicts; at least one hundred and thirty of them never learned any business. In the large prison of the State of Illinois are over fifteen hundred criminals, one-third of whom had no regular occupation before their commitment. At the penitentiary of Western Pennsylvania are three hundred and ninety-six convicts, of whom three hundred and ten, or 78 per cent., never learned a trade, and only 62 per cent. of whom were addicted to liquor-drinking.

The lack of a trade-education among the criminal classes of the community is, therefore, very prevalent. Between this lack and the committing of crime the link of connection is exceedingly firm and constant. The man who is without a trade is frequently without work. In his need, therefore, of the necessities of life he resorts to stealing to supply his wants. The man who has no trade, moreover, lives frequently by his own choice in idleness. Never taught to work in boyhood, he will not submit to the restraint of labor in manhood. In his idleness he is a pliant tool for the devil's use.

It is not, moreover, as is frequently suggested, mere ignorance, as such, that leads to crime. At the Minnesota prison only thirty-seven of two hundred and thirty-five convicts cannot read or write. At the Michigan prison over 75 per cent. of the inmates can "read, write and cipher." Three hundred and forty-eight of the nearly five hundred prisoners in the Iowa penitentiary are reported as possessing a "common education," and only fifty-three as having "none." At the prison of Eastern Pennsylvania only 15 per cent. of the convicts are illiterate; and of the more than fifteen hundred in the Illinois penitentiary 77 per cent. can both read and write. It is not, therefore, mere ignorance of the common branches of common school education that commonly leads to crime.

The small influence which ignorance exerts in tempting to lawlessness and the great influence of evil association, idleness, and want of trade-education are indicated in the following table prepared by the Rev. John Ruth, chaplain of the penitentiary of the eastern district of Pennsylvania. "It is based," he writes, "upon the most reliable information that could be gathered

from the convicts themselves and a patient study of their characters, as developed since they became inmates of the prison." The number of cases under examination is five hundred and fifty-six:

CRIME CAUSE.

	No.	Pr. ct.
CAUSED BY ASSOCIATION.....	189	33.99
Education good.....	6	01.07
" fair.....	95	17.07
" poor.....	70	12.58
" illiterate.....	18	03.23
WANT OF PARENTAL GOVERNMENT.....	91	16.36
Education good.....	18	03.23
" fair.....	52	09.35
" poor.....	21	03.77
" illiterate.....		
WANT OF PROPER MORAL AGENCIES.....	55	09.89
Education good.....	1	00.17
" fair.....	11	01.97
" poor.....	30	05.39
" illiterate.....	13	02.33
FALSE THEORIES OF SOCIAL REQUIREMENTS.....	38	06.83
Education good.....	2	00.35
" fair.....	30	05.39
" poor.....	4	00.78
" illiterate.....	2	00.35
IDLENESS.....	77	13.84
Education good.....	27	04.67
" fair.....	41	07.37
" poor.....	9	01.61
" illiterate.....		
WANT OF TRADE EDUCATION.....	106	.....
Education good.....	31	05.57
" fair.....	52	09.35
" poor.....	23	04.13
" illiterate.....		

From these statistics it must be inferred that the lack of a trade-education is the cause of a large proportion of the crimes committed. Evil associations, the want of parental government or of moral training lead many into criminal courses, but idleness and the lack of a trade-education force a large number into lawlessness.

How shall this lack of a trade-education, that prevails so ex-

tensively, be remedied? In answering this question I would suggest two ways.

First. Parents and teachers in both the public and Sunday schools should impress upon the boys under their care (the same principle applies to girls as well) the duty of learning a trade. To the parent this obligation is especially entrusted. But if parents are willing for their children to be, like themselves, unskilled Jacks at every trade, the teachers in the public school can easily instruct their pupils in the important duty; but if they too are remiss, certainly the teachers in Mission Sunday schools may exert a very strong influence in persuading their scholars to adopt a particular business.

Second. The second method of supplying this defect is for the municipal authority to use its influence in training young men to a trade. If the officers of a city or town know that children are growing up in ignorance of the three R's they may compel them to attend school. If they know that young men are growing up in ignorance of a trade, why may they not also compel them to adopt and to follow a regular employment? To discuss under what limitations, by what methods or with what sanctions the State may thus interfere with the individual's liberty would carry us beyond the limits of the discussion. A trade-education, in its broadest sense, might be made the condition either of voting or of holding certain public offices. But of the right of a State to oblige its youth to know some trade there can be no doubt; and the exercise of the right would at once decrease the number of commitments to the State Prison and House of Correction.

FOREST CORPORATIONS.

BY HORACE J. SMITH.

As a method of promoting and facilitating timber culture I suggest the establishment of Forest Corporations. The instances of farming operations being successfully conducted by corpora-

tions, or even absentee landlords, are very rare, but the conditions of sylvi-culture are somewhat different, and the disadvantages of corporate management are, by this plan, reduced to a minimum. The need for throwing the culture of trees into the hands of a corporation, arises from the fact that it requires more than the average life of a man, starting say at twenty-five years old, to harvest a timber crop from his own planting of seed, and the use of capital without its producing any returns for say thirty years.

Farmers in every neighborhood could readily select areas suitable for planting groves, and obtain them at minimum prices. They could also obtain labor from the members of the corporation at the lowest rates, payable in the stock of the association, to carry on the culture of the trees. If the enterprise were conducted by the surrounding farmers, the sympathies and interest of the vicinity would be concentrated upon it, which would not be so likely to be the case if it was undertaken by foreign and absentee capitalists, who would also have to pay perhaps double prices for the labor, while nine-tenths of the money spent would be disbursed in the vicinity of the Forest.

This plan is based on the gain to be derived from the *aggregation of small savings*, which has been so conspicuously illustrated by the Philadelphia Building Associations, in which the principle of co-operation has had one of its most successful applications. City mechanics have spare *money*, but about the only spare commodity that farmers have is *time*; if they could invest a fraction of each year in the stock of a Forest Corporation, it would grow into money in due course.

The farmer, from his isolation, has heretofore been denied participation in co-operative movements, but now—through the Grange, the associated dairies, and other instrumentalities, he is fast learning the advantages to be gained from combined and concerted action. Such Forest Corporations as are here suggested, would prove to be additional centres of usefulness and incentives to self-helpfulness. City capitalists would find in such corporations one of the most safe and profitable investments, provided they were not too greedy and allowed the farmer to take 50 or 60 per cent. of the stock.

The Legislature should provide cheap processes for the legal

organization of such associations, and the idea would probably become sporadic, and in suitable localities all over the State we should see it take root and thrive.

In some places fence timber would pay the best; in others railroad ties could be grown to a profit; whilst in others, the slow growing ornamental woods, such as black walnut which would bear transportation, might be the only kinds that would pay. A State Forester whose services could be had for \$2 per day and expenses, could give valuable advice in the selection of grounds as to aspect, soil, &c., the proper kinds and methods of planting and culture, and ultimately as to marketing.

In Europe, the initiative to industrial movements is often given by the government in the establishment of schools, &c., &c.; but in this country, the people are competent to take the initiative in every enterprise of pith and moment, and these neighborhood Forests would constitute in themselves objective schools, awakening and producing a liberal interest. The Forest Boards of these corporations would come to be no mere wooden figure heads, but fully equal to every tough and knotty subject, and their discussions and processes would awaken a great deal of attention to this very important subject.

Table showing the average retail price of a few articles of supplies for the family during the years 1858, 1862, 1864 and 1878.

	1858.	1862.	1864.	1878.
Butter, per lb.....	\$0 25	\$0 25	\$0 60	\$0 25
Bacon, per lb.....	12	12	25	12
Beef, salt, per lb.....	8	8	16	10
Coffee, Rio, per lb.....	16	25	35	28
Cheese, per lb.....	12	12	25	14
Hams, smoked, per lb.....	12	12	25	12
Kerosene, per gal.....		45	90	20
Lard, per lb.....	15	12	28	10
Molasses, New Orleans, per gal.....	50	50	1 10	60
Mackerel, No. 2, per lb.....	10	10	12	10
Pork, salt, per pound.....	10	10	20	10
Pepper, ground, per lb.....	16	16	60	25
Rice, per lb.....	6	9	15	9
Sugar, white A, per lb.....	11	11	23	10
Salt, fine, per bush.....	50	50	1 25	70
Starch, per lb.....	12	10	15	10
Tea, black, per lb.....	80c. to 1 00	80c. to 1 00	1 50	50 to 80
Flour, per cwt.....	2 75	2 75	6 50	2 75
Wheat, per bush.....	1 50	1 50	2 50	1 15
Rye, per bush.....	80	80	1 80	60
Corn, per bush.....	75	75	1 25	45
Oats, per bush.....	40	40	60	30

Average retail prices of a few leading articles of dry goods during the years 1858, 1862, 1864 and 1878.

	1858.	1862.	1864.	1878.
Canton flannel.....	12½	25	65	12½
Cambric muslin.....	6 to 8	10 to 15	20	6½
Carpet (tapestry).....		\$1 37½	\$2 50	90 to \$1 10
Cotton denims.....	12½	35	75	18
Cotton Jean.....	12½	12 to 18	50 to 60	10 " 12
Delaines.....	18¾	22	50	12½
Flannel.....	31	31 " 44	1 00	37½
Gingham.....	12½	12 " 18	31	10
Merino.....	\$1 00	1 25	\$2 to 2 50	75 " 1 00
Prints.....	6 to 12	12 " 16	31 to 37½	4 " 8
Shirtings, bleached.....	12	12 " 25	40	10
" unbleached.....	8	10 " 18	37½	8
Sheetings, six quarters wide.....	25	35	1 30 " 1 75	20
Spool cotton.....	4	6	18	5
Ticking.....	16	40	1 00	20
Waterproof cloth.....	71	1 25	2 75	75

STATISTICS RELATING TO NEW JERSEY, TAKEN FROM THE UNITED STATES CENSUS OF 1870.

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COUNTIES.	No. of Establishments.	STEAM ENGINES.		WATER WHEELS.		Hands Employed.	Capital.	Wages.	Materials.	Products.
		Number.	Horse Power.	Number.	Horse Power.					
Atlantic.....	86	6	159	35	510	469	\$381,500	\$136,324	\$433,575	\$799,464
Bergen.....	180	50	763	56	1,105	1,401	1,357,200	507,661	4,163,487	5,325,072
Burlington	339	30	1,264	88	1,430	3,283	2,277,075	1,240,405	2,896,937	4,884,438
Camden	329	59	2,507	26	508	3,836	3,507,295	1,470,517	5,902,246	8,330,013
Cape May.....	27	7	70	9	87	122	88,550	29,830	147,012	218,640
Cumberland.....	295	44	1,139	39	1,239	4,184	2,573,800	1,357,766	3,716,878	6,314,577
Essex	1,198	291	8,718	43	938	22,156	22,606,662	11,537,270	29,255,062	52,108,958
Gloucester.....	166	12	213	23	406	1,255	1,386,310	436,616	1,002,491	1,798,168
Hudson	333	93	4,246	.....	.....	5,624	11,718,400	3,280,526	17,229,652	24,256,017
Hunterdon	614	29	933	142	3,563	2,273	2,136,681	677,657	3,025,765	4,754,685
Mercer.....	475	78	2,280	65	1,492	5,100	5,022,782	2,092,349	4,981,541	8,881,074
Middlesex	259	49	1,965	36	768	3,513	4,231,320	1,349,701	2,623,086	5,372,583
Monmouth	302	15	331	42	800	2,192	1,735,225	463,160	1,589,682	2,605,176
Morris	280	24	745	104	3,022	1,851	1,783,100	847,035	2,809,775	4,644,951
Ocean	69	5	111	29	613	331	424,210	122,213	460,177	717,107
Passaic	218	62	1,704	97	3,134	9,632	8,176,400	3,882,440	11,850,780	19,958,728
Salem.....	289	18	344	44	750	1,056	1,359,377	293,629	1,563,365	2,277,791
Somerset.....	264	14	494	59	984	1,072	1,210,690	322,571	1,514,662	2,551,709
Sussex.....	249	13	334	61	1,558	661	868,669	168,861	997,157	1,455,104
Union.....	315	44	1,018	27	593	2,784	3,570,450	1,384,293	3,440,423	5,986,512
Warren	358	41	2,919	107	2,422	2,757	3,191,023	1,047,585	3,811,489	5,996,965
	6,636	984	32,307	1,132	25,832	75,552	\$79,606,719	\$32,648,409	\$103,415,245	\$169,237,732

Population.

Population of New Jersey.....			906,096
Males.....		449,672	
Females.....		456,424	
Above ten years of age.....			680,689
Males.....		335,819	
Females.....		344,868	
Engaged in all occupations.....			296,036
Males.....	251,655	Native.....	200,009
Females.....	44,411	Foreign.....	96,027

Classification of Occupations and Sexes, above ten years of age.

Manufacturing, Mechanical and Mining Industries.

Number of persons engaged in same.....			103,322
Males.....	89,165	Native.....	64,633
Females.....	14,157	Foreign.....	38,689
From ten to fifteen years of age.....			4,433
Males.....			2,918
Females.....			1,515
From sixteen to fifty-nine years of age.....			95,698
Males.....			83,191
Females.....			12,507
From sixty years and over.....			4,191
Males.....			3,056
Females.....			135

Professional and Personal Service.

Number of persons engaged in same.....			83,380
Males.....	54,275	Native.....	47,359
Females.....	29,105	Foreign.....	36,021
From ten to fifteen years of age.....			3,104
Males.....			1,166
Females.....			1,938
From sixteen to fifty-nine years of age.....			76,359
Males.....			50,100
Females.....			26,259
From sixty years and over.....			3,917
Males.....			3,009
Females.....			908

Agriculture.

Number of persons engaged in same.....			63,128
Males.....	62,943	Native.....	54,331
Females.....	185	Foreign.....	8,797
From ten to fifteen years of age.....			2,744
Males.....			2,734
Females.....			10
From sixteen to fifty-nine years of age.....			52,949
Males.....			52,800
Females.....			149
From sixty years and over.....			7,429
Males.....			7,409
Females.....			20

Trade and Transportation.

Number of persons engage in same.....			46,206
Males.....	45,242	Native.....	33,686
Females.....	964	Foreign.....	12,520
From ten to fifteen years of age.....			688
Males.....			665
Females.....			23
From sixteen to fifty-nine years of age.....			44,328
Males.....			43,428
Females.....			900
From sixty years and over.....			1,190
Males.....			1,149
Females.....			41

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ERRATA.

Page 17, ninth line from bottom, *their* for there.

Page 19, tenth line from top, *were organized* for originated.

Page 20, twelfth line from top, *perpetrated* for perpetuated.

Page 29, ninth line from bottom, *are* for have.

Page 43, tenth line from top, *employees* for employers.

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