On a Plea for Cotton and for Industry. Lecture by THOMAS
BAZLEY, Esq., M. P.

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The fact of the cotton trade in this country being dependent chiefly upon one source of supply for its raw material, has been at all times the cause of anxious solicitude to the thoughtful observer of the nation's progress; but the dilemma in which that great industry is now placed by that sole dependence deserves the consideration alike of the statesman, of the economist, of the merchant, of the employers of labor, and of the humane and patriotic public. Between cotton and labor, there was formed in Lancashire, three-quarters of a century ago, an alliance which, combining mechanical with manufacturing skill, has created an industry unparalleled in any other country.

Little more than a century since, the clothing comforts of the masses of the people were few in this country, and the abundant luxuries which now prevail were to them almost unknown. The prepared skins of animals were, up to that recent date, largely used in the clothing of the peasant, and in every house and hamlet the distaff and spindle, and the weaving loom, ministered to the supply of linens, woolens, and their mixture, in aid of domestic wants. In the reign of Elizabeth, her subjects were only equal in number to the inhabitants of Lancashire and Yorkshire at the present time, and greatly below the people of those two counties, with Cheshire added. The British people under Elizabeth were powerful, and in splendor and position ranked with the highest nations of the earth; yet her army, navy, aristocracy, court, and people, did not exceed that portion of Queen Victoria's subjects, who directly and indirectly subsist upon the toils, industry, and capital of the cotton trade. The kingdoms of Belgium, Portugal, Holland, and Hanover do not separately contain populations as extensive as the cotton trade supports in Great Britain; hence this industry of five millions of dependents, sustained by no separate regal power, and hitherto happy and prosperous as a portion of the subjects of our gracious Sovereign, may claim to be at least of some national importance. About three centuries ago, the whole people of this country might be equal to the five millions who now subsist by the manipulations, products, and commerce of cotton; but at this moment the population of the United Kingdom may be regarded as thirty millions, yet the same circumscribed and limited extent of land only exists to afford them the means of labor, and to yield them its fruits which supported their predecessors. Even in Elizabeth's reign, the people were deemed to be too numerous for the extent of land in her British dominions, and restrictions upon the building of dwellings in proportion to the areas of districts were enacted. If, therefore, the augmentation within the period now mentioned, of from five to thirty millions of people, be considered, it is self-evident that new sources of industry have had to be developed to supply increasing wants.

Mineral and agricultural products, in past ages, furnished scanty exports to pay for foreign articles of necessity and luxury ; but, with a constantly increasing population, the yield of the soil has been absorbed by the large consumption at home ; and now foreign supplies of corn, of other food, and of luxuries, are required for, and may be equal to the subsistence of one-third of the entire population of the United Kingdom. But whilst supplies of food have been needed for this increasing population, the other concomitants of comfort have also been required, and all these necessities of life could only be obtained in this country by the magic power of skill and labor.

A sea-girt land with navigable rivers, thus possessing egress and ingress, seems to invite foreign intercourse, and to be the first essential to a great mercantile and manufacturing district ; but when such a country is found to be immeasurably rich in its mines of coals and metals, when it possesses a temperate and healthy clime, and, above all, when its inhabitants are hardy, sagacious, toil-loving, free, and untiring, we may infer that the decree of Providence has ordained that the people with these advantages shall be blest with plenty, and shall contribute of their abundance to the families of mankind. To no country, however, has exclusive advantages been given ; but, wisely, mutual dependence appears to be the pacific bond intended to promote the welfare of the common brotherhood. Probably beyond every other people, the British possess the elements of successful trading and commercial industry ; but beyond the direct necessities of life, which their labor ought to enable them to buy, they need raw materials whereon that labor can be employed. Sheep's wool and flax, Great Britain can, in part, produce towards the demand for them ; but still large quantities of them are required from foreign countries, and silk, cotton, and other productions of the warmer regions must always be imported as contributions in aid of the manufacturing industry of the United Kingdom. Textile fabrics afford in their production the most extensive means of employment, and have become the indispensable clothing comforts of the people of every country. The fabrics and manufactures of cotton are, however, among the most useful, convenient, elegant, and economical productions of labor. From the quilt or bed-cover to the finest and most filmy muslins—from the fustian garments of the poor to the decorations of lace worn by the rich—and in the snow-white gift of the bleacher to the rainbow colors of the printer—cotton is prolific of comfort and ornament.

The persecutions of the Duke of Alva had banished from their homes the Flemish weavers, who took refuge in Britain. These skilful and ingenious workmen became valuable acquisitions in a country commencing the transition from the labors of the field to those of the loom ; and the domestic manufactures of our country began to indicate the progress and perfection which they were destined to attain. The dawn of a great industry was perceptible. Industry was honored, and labor inculcated as the foundation of the nation's coming distinction and prosperity. Even more than two centuries ago, when steam engines were unknown, canals not having been formed, nor large manu-

facturing establishments erected, and while deer-forests surrounded this vast city, there were merchants who promulgated sound economical principles, and who taught lessons of wisdom to the possessors of regal power. In London, in 1641, Roberts, a son of commerce, published an enlightened pamphlet, entitled "*Treasures of Traffic*," and in proof of the soundness of his views, the following extract cannot fail of being interesting and welcome. He said,—“Some princes are not satisfied with those materials that grow among themselves, and in their own countries, but they covet by all industry to draw others from their neighbors, or foreign nations, to employ their subjects, and to put their people on work, by this means much enriching themselves, and honoring their country; and adding a great help to the public traffic thereof, selling and venting them thus wrought, even to those nations who many times have sold and furnished them with the very first materials of the said manufactories.” “Manchester in Lancashire, must also herein be remembered, and worthily, and for their industry commended, who buy yarn of the Irish in great quantity, and weaving it, return the same again in linen, to Ireland to sell. Neither doth the industry rest here, for they buy cotton wool in London, that comes first from Cyprus and Smyrna, and at home work the same, and perfect it into fustians, vermilions, dimities, and such other stuffs, and then return it to London, where the same is vented and sold, and not seldom sent to foreign ports.” Thus at a period in English history when Charles the First was surrounded with troubles, discord and distress prevailing, Roberts, in beautiful simplicity of language, uttered the first plea for cotton and for its industry, thereby throwing a lustre upon his own name and upon the seventeenth century.

In the middle of the eighteenth century, a considerable home manufacture had arisen. Cotton was spun by hand, and afterwards blended in the loom with linen or woollen, thus producing a mixed fabric. The supply of cotton was then inconsiderable, and was obtained from Turkey and the Levant, and from the West Indies. Mechanical science now escaped from the libraries and traditions of the learned, and offered practical aid to the infant industry. Such a galaxy of talent and inventive genius as then stood forth to develop new methods of increasing the comforts both of the palace and of the cottage, the world had not seen. By an almost mysterious combination of efforts, Hargreaves, Whyatt, Arkwright, and Crompton were devising their several systems of spinning cotton; Watt was rendering available the majestic power of vapor, directing, controlling, and dooming it to become the universal drudge of man; Scheele and Berthollet, with their oxygenated muriatic acid, blanched the calico and the cambric; and the Mauvillions, Nixons, and Peels gave their colored tints to print these new fabrics; and as if inspired by the inventions which sprang from the east of the Atlantic, the Anglo-Saxon in the United States of America originated the cultivation of cotton in that great territory: but in giving this boon, by the production of slave labor, he conferred the bane whence the vast cotton industry now suffers, in the deprivations inflicted upon labor and capital. In the year 1700, when me-

chanical appliances were comparatively unknown in the manufacture of cotton, the consumption of this material might be one million pounds weight; but in 1860, the quantity had culminated in the consumption of one thousand millions pounds weight in that year. Cotton began to arrive from America in 1787, in sufficient quantity to prove the power of the States to produce it, and in that year Crompton triumphed over his mechanical difficulties and completed the mule,—this machine being the great agent at the present time for the production of coarse as well as of fine yarns; but spinning by rollers, and Arkwright's throstle spinning frame, had been invented twenty years previously; hence the history of the modern and mechanical cotton trade may be dated from this period.

Eighty years ago the cotton industry of our country was thus initiated, and from that time to the present, progress, improvements, and extension have characterized it. The science, skill, and invention which have accompanied its development are wonderful. It has afforded employment, comfort, and prosperity to many millions of the people of this country during that period, and it has contributed very largely to the national revenue. During the great struggle with the first Napoleon, our men were able to leave their country for the strife of war, and yet the steam engine and the mechanical agencies which existed at home more than compensated for their physical loss; but here was the waste of the nation's strength. Wiser would it have been had these new resources been developed for the moral, mental, and social improvement and comfort of the people at large. Most probably the cotton trade and the development of new mechanical powers, have enabled the people of this country to sustain a system of taxation which, without that trade and those treasures, could not have been borne, and have supported a national expenditure alike extravagant and injurious. The state, therefore, has participated in the contributions of all who have promoted and sustained this industrial fabric.

The capitalists of this trade have now two hundred million pounds sterling invested in it, in fixed and floating property; and the people directly and indirectly employed in it being now five millions, we arrive at the important deduction that not only does the national exchequer derive great benefit from it, but we have capitalists and laborers supported by it as numerous as are the people of several European kingdoms of the present time. Indifferent spectators of the abundance which has happily prevailed in this country since the introduction of the liberal commercial policy which is now established, rarely reflect upon the obligations this vast industry has conferred in aid of the elements of social comfort. Of late years, the exports in cotton manufactures have been about fifty millions sterling per annum, or about one-third of the gross exports of the United Kingdom. Well, then, as cotton exports constitute one-third of the whole, it becomes evident that cotton buys one-third of the imports; hence, as gold, silver, gems, coffee, tea, sugar, tobacco, wine, oil, and the fruits of sunny climes, as well as corn and other food brought hither, are foreign products largely imported into the United Kingdom, we must claim the

merit for the cotton trade of having bought and paid for one-third of these exotic and foreign supplies. In 1860, the last year of active and full employment for the whole of the cotton trade, its manufactured products exceeded eighty millions sterling in value, something more than fifty of which were exported, leaving about thirty millions as the value of the home consumption of cotton manufactures; but as this latter sum will about equal the cost of the raw cotton imported, the beneficial interest of the country in the cotton industry will be represented by its export trade of upwards of fifty millions sterling. That so extensive and prosperous an industry should have been founded upon the supply of a foreign product, is not the least wonderful fact of its history; but that cotton should have been almost exclusively, as it has been, obtained from almost adverse sources, is a great reproach to the British nation.

Of the 2,523,000 bags of cotton consumed in this country in the year 1860, 85 per cent. consisted of the growth of the United States, 8 per cent. of the growth of Egypt, Brazil, and other foreign districts; whilst of cotton from the British East and West Indies the consumption was only 7 per cent. ! In consequence of the convulsion in the States of America, the consumption of cotton in Great Britain, in 1861, resulting from its contracted supply and the loss of the American markets for its manufactured products, diminished 10 per cent.; and whilst of American and other foreign cotton the consumption became only 85 per cent. against 93 per cent. in the previous year, the consumption of East Indian cotton was 15 per cent. against the previous 7 per cent.; but of the present diminished consumption probably 75 per cent. may be East Indian. A very rapid increase has been effected in the consumption of East India cotton, which, in 1860, was 3500 bags per week, in 1861, 7000 bags, and in this year is proceeding at the rate of 15,000 bags, or more, per week, showing the increase to be 100 per cent. per annum upon each successive year. The actual power of consuming cotton in the United Kingdom is 55,000 bags per week; but, lacking the requisite supply, the present total consumption cannot exceed 25,00 bags per week.

Such, then, having been the rise, progress, productive and consuming power of the cotton trade, are we blameless for allowing this immense industry to exist and extend upon the frail basis of slavery upon which it has largely depended?

How fearful is the contemplation of a people, whose labors, directed by intelligence and right principles, having supported them with abundance, and still able and willing to work, being deprived of the material on which their industry has been advantageously engaged? The deprivations in this great industry have become lamentably severe. With less than half a supply of raw material, and at the enhanced cost of a whole supply, only half employment can be afforded, and consequently only half wages, or less, can be earned. Already the working classes of the cotton trade are subjected to diminished earnings of a million pounds sterling per month. Generally, the mills are working half-time, but many are wholly stopped, whilst a very few con-

tinue to give full employment, but the average time now worked will be the half-time now stated; and the consumption of cotton is only 25,000 bags weekly instead of the 55,000 bags capable of being consumed; but in this latter quantity is included the probable consumption of many new mills which have not begun to work. Of the consumption of cotton at the present moment, the East Indies supply 75 per cent., $12\frac{1}{2}$ per cent. is America, and $12\frac{1}{2}$ per cent. other foreign kinds. Last year the East Indies were exhausted of the stocks of cotton usually held there, and it is doubtful whether the million bales then received can be repeated this year. No efforts to obtain cotton from new fields, commensurate with the necessity, are being made.

In 1848 Mr. Bright, M. P. for Birmingham, proved by his parliamentary committee the capability of the East Indies to grow and supply abundantly most excellent cotton. With many men of experience, I gave evidence before that committee; but apathy in the Government, in the trade, and in the public mind, has caused to be neglected the admonitory facts then elicited.

Essentially, Great Britain possesses the monopoly of the best land found in the world for the growth of cotton. In the East Indies, the policy, under the rule of a nominally commercial company, has been absurdly political and despotic. The material prosperity of the people was neglected; navigation, by improving the rivers, has been discouraged; few canals have been formed; roads have scarcely existed; ample means for irrigation have been withheld; quays are almost unknown; and the land held by Government feudal power has been largely unproductive. By the small water supplies of Colonel Sir Arthur Cotton, immense benefits have been derived in Madras, and by the recent changes in land tenure, great improvements will doubtless result. Railways are now being established, and the general indications of the great dependency are becoming favorable for the extension of cotton and other agriculture, and for trade and commerce. For many years the improved navigation of the Godavery has been a subject of contention and of hope deferred. This river ought to connect the great cotton-fields of Berar with Coringa and other ports in Madras. The rocky barriers of the Godavery should be either removed, or they should be avoided by the aid of short links of canals, or by tramways. To what extent the works of the Godavery have proceeded we are ignorant, but the advantages which would accrue from their completion cannot be overstated. Its fertile valley would yield immense supplies of excellent cotton and other products; the markets to ten or twelve millions of people being opened would yield double advantages, alike to a home and a foreign trade. On the banks of that river, at Ingelhaut, cotton of most acceptable quality to the British spinner is already grown; and in its vicinity, as also in Berar, cottons could be cultivated which would equal, if they did not surpass, the productions of New Orleans. Of the power of the East Indies to produce superabundant supplies of most excellent cotton, no doubt need be entertained. The communications within the vast dependency being effectively extended to its sea-board in every direction, its agriculture

being industriously conducted by the aid of practical science, and the government of it becoming wise and just, benefits would flow from and to it, fructifying and enriching the whole empire. In 1860, the imports of cotton from the East Indies were 561,200 bags, of which two-thirds were exported, and in 1861 there came 986,600 bags, or nearly double the previous year's supply ; but though the importers of this enlarged import have derived very great profits by the advance which has taken place in the price of cotton, the ryot, or farmer, in India, has not yet importantly obtained any advantage from the increased value of his produce ; but if the communication with the interior of India, both as to intelligence and the conveyance of cotton, be facilitated, then the ryot will be stimulated by compensating and increased rewards, to extend the cultivation of cotton, and to improve the quality of it. As now stated, ample proof exists that India can grow most excellent cotton, and many supplies of very useful qualities have been thence received ; and I now have the satisfaction of placing before this meeting a sample of superior cotton sent by Dr. Short, from Chingleput, in Madras. I am also enabled to display some very good yarns, of above the average fineness, being 60s. warp and 80s. weft, spun from it by Mr. Kirkpatrick, at his mills near Manchester.

A Cotton Supply Association was formed in Manchester a few years ago, and its labors are constantly directed to obtain corrective measures for the evils of India, and to promote the growth of cotton wherever the soil and climate of any country will enable it to be produced. This association has impelled a wiser policy for India, and has rendered valuable services to that dependency and to other countries ; having made grants to upwards of 400 places of cotton seeds and or cleaning gins, besides other agricultural implements. By the exertions of this body, small supplies of cotton have been received from many new fields of cultivation. Cotton-growing is being slowly resumed in the British West Indies, whence encouraging supplies are now received ; but if the proprietors of estates in those islands did their duty to themselves and to their country, an enlarged production of excellent cotton would compensate them and contribute to the nation's prosperity. The fine island of Jamaica, which could produce very large quantities of superior cotton, is a territorial wreck ; but see the capability of this island by this sample of cloth made from its cotton. Demerara, and other neighboring possessions, can produce more cotton than the United Kingdom could manufacture. From the Cape of Good Hope to Port Natal cotton can be abundantly produced. Africa has of late years sent small, but valuable supplies of cotton, of qualities quite equal to the produce of New Orleans ; but her Egyptian cotton has, from the time of Mehemet Ali to the present moment, been a large and most welcome contribution. If the million per annum, which our fleet for the suppression of slavery costs, had been devoted in our own colonies, or even in Africa, to the encouragement of the growth of cotton, sugar, and other products, which the labor of the negro in slavery has yielded, then that disgraceful traffic in human beings might have been annihili-

lated, and our own pursuits untainted with the wrongs inflicted upon the colored race. Australia, however, has amazing powers for the production of cotton, and in sections of that great country—Queensland, Victoria, and New South Wales—cotton of every class, from the lowest to the highest, might be cultivated and produced beyond the wants of all the world. Queensland has sent small lots of cotton of unsurpassed beauty and excellence, and from this colony, and from New South Wales, samples of cotton may be seen in the great International Exhibition of qualities adapted to the production of the finest muslins and laces which any skill could manipulate, as may be seen by this beautiful specimen of lace made from it. Labor appears to be almost alone the sole requisite for obtaining supplies of cotton of incalculable extent from Australia. On referring to the cultivation of cotton in America, we learn that there one million of negroes can produce cotton of nearly twice the extent of its consumption in Great Britain, consequently half a million of laborers would suffice to produce the cotton needed by the latter; and the question arises whether it would not be an act of prudence and of wisdom to induce this number of Chinese men, women, and children to become cotton-growing laborers in Australia. In the States of America, only about one-quarter of the negro population is there engaged in cotton agriculture, the large majority being employed in producing tobacco, rice, sugar, Indian corn, and in handicraft and domestic pursuits or occupations. The Emperor of France has wisely offered great inducements for the growth of cotton in Algiers, whence very superior cotton is already supplied. That French colony is within a single week's sail of this country, and some eminent men of business here and in France are endeavoring to extend the cultivation of cotton in it, which, if judiciously carried out, cannot fail to become of vast advantage to all the relations of both countries.

With these facts, the power abundantly to produce cotton, not only in British possessions, but in many foreign states, is beyond all doubt.

By the general neglect of cotton agriculture, an aggregation of evils now exists which can only be contemplated with profound grief and apprehension. Probably 100,000 laborers, who have usually shared the employment afforded in the cotton trade, are now totally idle and penniless. 300,000 more are working short time, and in the sympathetic branches much deprivation prevails. The losses of the laboring classes are one million pounds sterling per month, or twelve millions per annum; whilst the employing classes are, by loss of rents, interest of money on stagnant capital, and in suspended operations, without computing anything for loss of profit, sustaining a loss equal to eight millions per annum, thus making the certain loss in labor and capital, into twenty millions sterling per annum; but the great infliction of double price for cotton, which adds eighteen millions per annum to its normal market cost, subjects the trade to a drain of nearly forty millions per annum, and to an exhaustion tending almost to extermination. Cotton-spinning and manufacturing in Great Britain, are equal in extent to those pursuits carried on in America, and upon the continent of Europe. Consequently, in the British and foreign cotton

trades, the losses and disadvantages will be double the extent stated for this country alone. A plea, then, for cotton and for industry becomes a duty and a necessity.

Seeing, therefore, the extent of distress existing in the districts of the cotton manufacture, and that increased deprivations may inflict deeper misery upon the laboring classes, whilst many capitalists may be on the verge of total ruin, and seeing also that the people of the United Kingdom generally sympathize with the sufferings in the cotton trade, what assistance can be rendered to this apparently decaying industry is a question that many benevolent individuals will ask. Will not the British Government and people best remove present and future evils by assisting to develop the resources of their colonies, which, by the introduction of cotton cultivation upon a large scale, would be rendered productive and prosperous?

Shall no attempts, commensurate with the wants of this great industry, be made to obtain adequate supplies of cotton, and at the same time to benefit the dependencies and colonies of Great Britain? No charity can compensate for the losses now sustained, and effectual relief can only proceed from an abundant supply of good and cheap cotton.

A moral truth has now been taught the world—that slavery and tyranny shall not permanently yield prosperity; and the wrongs of the oppressed crying for justice, indicate that retribution is the corrective of iniquity. Experience and the physical construction of the earth both tell us that without adequate exertions there can be no beneficial result; and consequently, in this great country, when dangers are threatening extinction to any portion of the community, efforts must be called forth to sustain the social and industrial fabric, to contribute to the means of labor, to promote commerce, to extend civilization, and still to raise our national aims in the cause of humanity and of universal justice; that should prosperity again shine upon our country, there may be, in our distant intercourse and relations, no leading into captivity, and at home no complaining in our streets.

*Association for the Prevention of Steam Boiler Explosions,
Manchester.*

From the Journal of the Society of Arts, No. 520.

At the meeting of the Executive Committee, held on Tuesday, October 28th, 1862, the chief engineer presented his monthly report, of which the following is an abstract:—

During the past month there have been examined 353 engines and 539 boilers. Of the latter 9 have been examined specially, 9 internally, 48 thoroughly, 473 externally, in which the following defects have been found:—Fracture, 7 (1 dangerous); corrosion, 30 (3 dangerous); safety-valves out of order, 15; water gauges ditto, 7; pressure gauges ditto, 20; feed apparatus ditto, 7; blow-off cocks ditto, 27; furnaces out of shape ditto, 3; blistered plates, 5. Total, 121