

***‘Ex luce lucellum’?* Innovation, class interests and economic returns  
in the nineteenth century match trade**

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by

**A J Arnold\***

University of Exeter

**Abstract**

Bryant and May, market leaders in the nineteenth century match trade, were involved in three of the most divisive industrial episodes of the nineteenth century, the ‘sweating’ of domestic out-workers, the wage ‘fines’ that led to the ‘match-girls strike’ of 1888 and the recurrent scandal of ‘phossy-jaw’.

This paper examines the connections between Bryant and May’s record of innovation, the effects of its more important policies on employee interests (and the ways in which this has been presented within the business history literature) and the economic returns the company was able to secure and distribute between its various class-based interests.

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\*Tony Arnold, Professor of Accounting and Business History, School of Business and Economics, University of Exeter, Streatham Court, Rennes Drive, Exeter EX4 4PU, Exeter, Devon, England.  
Tel: 01392 263484 Email: A.J.Arnold@exeter.ac.uk

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## I

It is widely recognised that, although business production ultimately depends on co-operation, the employment relationship involves an inherent conflict between profit-seeking and wage-earning interests. Fitzgerald, in a paper on the response to 'new unionism' at Bryant and May in *Business History*, argued that the firm was one of a number of British employers in the late nineteenth century actively trying to resolve this dilemma and that the move from paternalistic family control to the 'less personalised relations' of the broadly owned joint stock company did not, in itself, lessen the willingness of managers to introduce schemes in pursuit of industrial harmony.<sup>1</sup>

Bryant and May had been pioneers in the British match trade in the third quarter of the nineteenth century, with their business progressed from the importing of Swedish matches to the manufacture and sale of their own product. At first the business was operated as a privately-owned partnership but, following the retirement and death of some of the partners the business became a joint-stock company in 1884. In the next fifteen years the firm would be involved in some of the most divisive industrial episodes of that century, the 'sweating' of domestic out-workers who made match-boxes, the wage 'fines' that led to the 'match-girls strike' of 1888 and the recurrent scandal of 'phossy-jaw', the acute facial tissue destruction, sometimes fatal, of workers exposed to the fumes from the yellow phosphorus compound used in the manufacture of lucifer matches.

Bryant and May's business had grown considerably since it had been incorporated, but it had also begun to lose its innovative edge. In common with other leading British firms, they paid little attention to the commercial possibilities of fully-integrated match-making machinery but the entry of the Diamond Match Company of America in the 1890s into the British market to exploit the new technology, rapidly undermined Bryant and May's position and led to a merger in 1901 in which Diamond was the dominant party.<sup>2</sup> Thereafter, with a more professionalised management structure and an increasing emphasis on mechanisation rather than cheap

labour, the firm took a very different approach to industrial relations and would become noted for its pioneering commitment to co-partnership schemes.<sup>3</sup>

The effects of profitability levels on industrial welfare policies are also unclear and the ready assumption that falling profits tended to ‘harden employer attitudes towards wages, de-skilling and work-organisation’, particularly after 1880, has not really been tested.<sup>4</sup>

This paper examines the connections between Bryant and May’s innovations as a market leader in the nineteenth century match trade, the effects of its more important policies on employee interests (and the ways in which this has been presented within the business history literature) and the economic returns the company was able to secure and distribute between its various class-based interests.

## II

The use of splints tipped with sulphur to produce combustion dates from the early sixteenth century, but it was not until 1827 that the first practical friction matches were developed, by John Walker of Stockton-on-Tees. Walker’s matches worked well chemically but often needed more friction than the heads could accommodate and, within six years, phosphorus friction matches (also known as ‘lucifers’ or ‘congreves’) were being produced commercially in Vienna and elsewhere. Early forms of matches gave off noxious fumes and were liable to cause unwanted fires but, by the mid 1850s, a safety match (with chlorate of potash on its head) had been patented that would strike only on specially prepared amorphous phosphorus surfaces, that could be painted onto the sides of match-boxes.

In 1839, two Quakers, William Bryant and Francis May, became partners in a small London mercantile house operating initially as general merchants from an address in Southwark.<sup>5</sup> May (b. 1803) had been a grocer and tea dealer on Bishopsgate, in London since 1825 and he acted as the London agent of Bryant (b. 1804) and James, who manufactured candles, soap, refined sugar and blacking compound in Plymouth, before the formation of the partnership. The business grew steadily until 1850, when the entering into of an agreement to begin selling ‘lucifer’ (strike-anywhere) matches

as the British agents of Carl and Johan Lundstrom of Sweden led to an increase in match sales beyond any of their expectations.

The new trade transformed the scale and nature of their business, although it soon led to an irrevocable rift between the two partners. Francis May was fundamentally opposed to the use of 'rigorous sales methods' and he accordingly confined his energies to their non-match operations. Bryant, on the hand was all for the maximum commercial exploitation of their dazzling business prospects and he agreed to put more capital into the business and leave Plymouth for London to concentrate fully on the match trade.<sup>6</sup>

The firm's sales of matches rose from 231,000 boxes in 1850 to 10.8 million boxes in 1855, nearly all of which were Lundstrom strike-anywhere matches. The Swedes had developed a safety match in 1852 that used red, not white phosphorus in the friction surface, but they did not seem to see this as much of a commercial prospect and sold the British patent rights to Bryant and May in 1855 for a mere £100.<sup>7</sup>

By 1860, two-thirds of Britain's matches were being produced by thirty firms in the London area, most of them in the East End.<sup>8</sup> Many were small 'cottage producers' but three were operating on a much larger scale; Letchford and Co. of Bethnal Green, Bell and Black from Bow Bridge, Stratford and Bryant and May.<sup>9</sup> Bryant and May's sales had that year risen to 27.9 million boxes and Bryant started to look for premises in the London area where the firm could manufacture their own safety matches and broaden their trade beyond the Lundstroms' lucifers. He found the three-acre Fairfield Works close to the River Lea in Bow in 1861, where they soon began to manufacture their own safety matches and 'other chemical lights'.<sup>10</sup>

Thus, in the 1860s, Bryant and May's business became primarily a manufacturing rather than a merchanting organisation. Returns in the industry were generally high, largely because wage costs were so low, due to the enormous pool of poor, unskilled workers that the East End provided but the Bryants also invested heavily in new equipment that would expand the scale of their operation.

The 1863 Commission on the Employment of Children in Industry investigated the London match trade and were generally critical of conditions in the industry. They found the large, purpose-built Fairfield factory a 'very nicely conducted place', however, although at this time Bryant and May (B&M) were producing only safety matches, which used relatively harmless materials.<sup>11</sup>

They soon began to reduce their imports of Swedish lucifers and produce their own strike-anywhere lucifers, using the highly poisonous, yellow (or white) phosphorus.<sup>12</sup> In this early, innovative phase, the trade was offering particularly high rates of profit and facilities at the factory were quickly expanded; by 1865, £11,915 had been invested in net assets (as against only £4,625 two years earlier), driven by returns on capital that were now averaging 46 per cent.<sup>13</sup>

Wilberforce Bryant, eldest son of William, who had been brought in as manager of the factory at Bow (at a salary of £300 a year) became the driving force behind the firm and Francis May ceased to be a partner in 1864, before retiring to the country.<sup>14</sup> Corley thought the co-founder, William Bryant, fully deserving of the financial rewards of good organisation and the sophisticated mechanization of his trade but saw the easing out of Francis May by the Bryant sons as illustrative of the 'difficulties encountered in the transition from plain Quaker to wholly non-Quaker management, via worldliness' and particularly indicative of 'the dark side of Quakerism—a meanness and narrowness of outlook'.<sup>15</sup>

In April 1871, the Chancellor proposed a substantial tax on matches, provoking vigorous protests from the industry. The Times saw it as a heavy tax on a necessity and one that would ruin hundreds of families in the East End of London. Queen Victoria then wrote to Gladstone to express her own concerns at the tax, given its unusual visibility (a tax stamp would appear on every box of matches) and the likely effects on its employees, particularly in the poorest parts of London. The match workers, for their part, organised a 'monster procession' from Bow to Parliament on 24 April 1871. The march was blocked repeatedly by the police, leading to violent confrontations on the Thames embankment before the marchers were able to present their petition. The police tactics drew widespread criticism, the Bill was withdrawn by

the government and B&M duly celebrated by paying for a victory celebration and the construction of a drinking fountain in Bow Road.<sup>16</sup>

The following year the firm abandoned all its other lines of business in order to concentrate wholly on the match trade. In the factory, arrangements by now were strictly hierarchical. Output was measured and each worker paid by the piece and male foremen had charge of the factory floor and could hire, discipline and fire staff at will. The firm had almost 5000 employees, many seasonal, most of whom were women and many being Irish. They were split mainly into fillers (of splints into the coiled frames), cutters-down and packers, with men carrying out the most dangerous operation, dipping match-splints in the compound.<sup>17</sup> Hitherto, the trade had been almost entirely manual but Wilberforce now invested in nearly three hundred match-dipping machines, in other labour-saving machinery and in twenty-five new steam engines to provide the necessary power. A splint-making mill was also established on Bow Common, converting thousands of tons of Canadian pine into match splints in order to keep pace with production at Fairfield.

The rate of sales growth, particularly in such overseas markets as Australia, India and the Far East, was considerable and increased still further after the business was turned into a limited company in June 1884. The new business bought up the assets of the old business from the remaining Bryants, Wilberforce and Frederick, who became the first managing directors with generous remuneration contingent upon shareholder dividends being at least 10 per cent.<sup>18</sup> Wilberforce was very keen on close managerial control and two outside directors were appointed who agreed to give their 'whole and undivided attention to the interests of the business' and meet every day (except Sundays).<sup>19</sup> Dividends started to run at 20 per cent, which helped to boost the price of the company's shares, which were used to buy out a number of competitors, including Bell and Black (with factories in Stratford, Manchester, York and Glasgow) in 1885.<sup>20</sup>

### III

During the second half of the 1880s, the site at Fairfield housed four separate and distinct factories, covering nearly five acres and close to both the railways and the canal. The matches were packed into boxes by the factory girls, who stood in rows for

ten hours a day, cutting the double length matches (each end dipped in a liquid of phosphorus and other chemicals) in two with an extremely sharp knife hinged to a block before pressing them into match-boxes.

At that time, the boxes were produced through domestic outwork, with the match-box makers making the boxes in the 'intervals of their domestic duties', for which they were paid 2.25d a gross, before deductions for string, paste and fuel for a fire to dry the finished boxes. The domestic outwork system was attractive to employers as the work could not readily be unionised and lay outside the remit of Factory Acts and plenty of this type of work was made available to workers in areas of East London such as Bromley, Stepney, Stratford, Limehouse, Polar and Bow, where 'wages had by custom always been rather low' and where the failure of a number of important businesses had left a large pool of unemployed unskilled labour and which Engels would later describe as 'the world's largest and most wretched working-class district'.<sup>21</sup>

Any attempt to assess the reasonableness of wage payments to the domestic outworkers is complicated by the piece-rate system of payment, whereby employee incomes are partially dependent on the speed at which they work. The Chairman explained that the company had certainly 'absorb[ed] other match factories in the country, with a view of cheapening the cost of production' but partly to bring work to the East End, where the box makers were 'well paid'.<sup>22</sup> More generally, however, those employed in the match factories were seen as the 'poorest of the poor', arousing the active concerns of the Salvation Army and the contemporary observer and writer, Dickens, thought them the 'worst paid of all the very ill-paid workers in the East [of London]'.<sup>23</sup> In general, the wage payments have been seen as an unreasonably small division of the value added by the joint efforts of the various factors of production although Ball and Sunderland have recently argued that low wage payments in such trades merely reflected the modest value increments such workers added and that the 'enormous growth in employment in "sweating" helped to keep people out of even worse jobs or the workhouse'. Thus, they argue, home-working was appropriate for operations that did not need the expensive machinery that increasingly concentrated in London's East-end and suggest that such arrangements were better described as the 'new sub-contracting system' rather than 'sweated labour'.<sup>24</sup>



## IV

‘The match-girls strike of 1888 had a psychological and social significance out of all proportion to the comparatively small scale of a dispute at a single large factory, Bryant and May in the East End. It demonstrated to all union men what a few thousand girls—many very young, mostly of Irish decent, initially unorganised and considered unorganisable—could achieve if they had the courage to defy oppressive and unjust employers’.<sup>25</sup>

As B&M grew rapidly during the 1880s, their practices as an employer began to be criticised. In October 1885, their match girls went on strike, unsuccessfully, over low wages and fears about the effects of phosphorus fumes on their health.<sup>26</sup> The workers’ dissatisfactions attracted the attention of Henry Champion, founder of a socialist journal, *Common Sense*. His interest was particularly attracted by the strength of their dividend record (particularly since they were based on a capital that had almost certainly been watered on incorporation), by the fact that the firm’s founders were Quakers (who generally claimed to be considerate in their dealings with other people) and by their rise from humble origins, which meant that their wealth could be directly attributed to their practices as capitalists.<sup>27</sup>

Champion attended a meeting of the Fabians on 15 June 1888 on the low wages paid to women. He outlined the general circumstances at the factory, the company’s dividend record and the fact that the market value of their £5 shares was more than £18 and the members agreed that they should boycott B&M’s products, at least until two members, Annie Besant and Herbert Burrows, had investigated the company’s practices.<sup>28</sup>

They found that the girls stood throughout a ten-hour working day, for wages that ranged from 4s (for a girl of 16) to 9s per week. They were also subject to a range of fines for anything from dirty feet to talking or having untidy workbenches as well as deductions for necessary work materials, in clear breach of the Truck Acts. Girls that arrived late for work were shut out for the morning, losing half a daily wage that

could be as low as 8d and they were all liable to suffer occasional blows from the foremen.<sup>29</sup>

An article contrasting the position of employees, ‘born in slums, driven to work while still children, undersized because underfed, oppressed because helpless [and] flung aside as soon as worked out’ with the dividends of twenty-three per cent that were allegedly paid to Bryant and May’s shareholders, was published in the Link, under the title of ‘White Slavery in London’ and caused a public outcry. Bryant and May denied that any fines had been levied, threatened to sue and tried to persuade some of the girls to sign a statement that the article was untrue.

When they sacked the girl suspected of being Annie Besant’s main informant, however, the wood box fillers in the Victoria factory, Fairfield, all of whom were Irish ‘by birth or lineage’, immediately struck work on Thursday 5 July 1888, despite the fact that they were B&M’s highest paid female workers. This in turn prompted hands in the other factories to go on strike, bringing the number of strikers up to 1400 women, some of whom went to Annie Besant and explained that she had ‘spoke up for us and we weren’t going back on her’. As a mass action by unskilled workers, it had few precedents in Britain and none as far as female employees were concerned.<sup>30</sup>

At first the strike attracted a mixed reception; the conservative Morning Post ignored it altogether, the Times, in its leader of 14 July, blamed the dispute on agitators who had ‘spared no effort’ to bring the quarrel to a head and, ‘apart from the socialist and radical weeklies, few newspapers gave support to the match girls’. The company argued their case, claiming that the rallying call, ‘give us back our pennies’ against the practice of deducting wages for the employment of girls to carry material for the box-filling women long after the practice had died out (due to the introduction of machinery) was due to misunderstandings and agitation. The girls had originally been paid 3d per three gross for taking matches from the frames, cutting them and filling the boxes. The company saw this as 2.25d for cutting and filling and 0.5d for carrying and emptying the frames and felt the 2.75d they were paid when coils replaced frames, was a rise from 2.25 (per three gross), although the girls saw this as a reduction from 3d, given the time spent in carrying and waiting for their turn to have their coils emptied.<sup>31</sup>

As far as their wages were concerned, B&M said the girls could earn ‘from 15 to 25 per cent more than the same class of girls in any other industry in the East-end’ and that one girl who claimed to earn less than 6s to 8s a week had in fact that year been paid 12s 7d a week, but that ‘outside agitators and Socialists had got hold of these girls and just accepted any statement they liked to make’. They also argued that the girls were robust, healthy and well fed and dressed, rather than half-starved and wretched, but the company’s public image was quickly damaged by the revelations, even if some of them were obviously politically motivated; Bryant and May were well-known liberals and more than one London newspaper asked how they could square their political beliefs with the ‘near-starvation wages’ that they paid.

The Fabians also kept up the pressure. Mrs Besant discovered that more than fifty clergymen were shareholders in the company and contrasted their daughters’ ‘silky clustering curls’ with the partial baldness of match girls required to carry heavy boxes on their heads, to the ‘great detriment of their hair and spines’ and challenged the company to sue her for libel in the courts, rather than victimise their own employees.<sup>32</sup>

The Union of Women Matchmakers, the first womens’ trade union, was formed on 8 July 1888. More than £700 in strike pay had been collected from well-wishers and distributed but the following day, the hands from the wax factory went back to work and the directors agreed the wording of a letter to the press concerning the dispute, just as some of the girls went to Parliament to press their complaints. However, just as the company thought they were beginning to pull through the dispute, a group of sociologists from Toynbee Hall, who had been investigated the claims in the article in *Link*, published findings in the *Times* that the claims were soundly based.<sup>33</sup> They met the directors of B&M on 12 July, closely followed by a deputation from the London Trades Council and between them they convinced the company that their clearly established practice of making deductions from wages was in flagrant breach of the Truck Acts and could not be justified in law.

After thinking this over, the directors met the strike committee on 16 July and agreed to end the system of fines, provide an eating room (in order to reduce the risk of

necrosis), recognise the union and also provide barrows, to save the girls from having to carry heavy boxes on their heads. Faced with so complete an acceptance of their complaints, the girls lost little time in ending the strike and returned to work on 18 July, the day on which a letter written by B&M's directors, attributing most of the difficulties to the influence of 'socialist agitators', was published in the Times.<sup>34</sup>

The dispute had really been about the balance of power between the company and the workers and only concerned the various deductions from the wages, rather than the wage scales themselves, even if the public had been faced with the acute contrast between the girls' pay and the shareholders' dividends. The settlement accordingly did not raise the girls' wage rates, cost the company little in the way of money and also did little to help the position of women who made match-boxes at home. The strike action was highly successful, however, in showing that determined employees acting in unison could win against their employers and meant that the company would 'never take the match workers for granted again'. In future, disputes at B&M would be dealt with by senior managers, rather than by individual charge-hands or foremen and the company would go to some lengths to 'emphasise the good relationships that existed between management and labour'. It also encouraged other groups of workers to stand up for their rights and may well have influenced the dock workers, tailors and boot-makers to take strike action the following year.<sup>35</sup> Surprisingly, however, the new Union (of Women Matchmakers), despite attracting more than 650 members and then opening up their membership to male workers was wound up in 1903, following an unsuccessful wild-cat action the previous year.<sup>36</sup>

At a general meeting in August 1888, the directors claimed that they had been the victim of a Society that aimed at the 'purification of business' in general and admitting that the girls' wages had been lower than usual that year, but only because demand for their products were flat and because less employees than usual had been able to obtain their usual summer work picking peas and fruit. One director, Mr. O. Trummer, noted the widely-publicised assertion that the dividend of 20 per cent had been 'earned by the workers in the factories' but said this was 'not the case. It had been largely contributed to by the management in the office. If ever it was decided to divide the profit amongst those who earned it, he thought that it would be found that

the workers in the factories had already received their full share; whether the dividend paid was 2 per cent or 20 per cent, the wages in the factory would always be paid'.<sup>37</sup>

When F. C. Bryant died in December of that year, the company mawkishly attributed his death to the way he 'took to heart the action by the agitators in endeavouring to injure the company and over which he exerted himself so much' but more robustly announced dividends for the year of 17.5 per cent, despite the actions of 'certain outside agitators who had disturbed their workpeople [and caused] ... a great worry and annoyance to the directors and management'. In July 1889, the annual remuneration of both the managing directors was raised to £2000 each and the company expressed its gratitude to the London press for the way they had covered the dispute earlier that year.<sup>38</sup>

Much of the (extensive) twentieth century literature on the match-girls dispute seems to see it as a welcome corrective to the exercise of excessive employer power. The question of whether or not the girls were poorly paid, even before the wage 'fines' is complicated by the use of piece-work as the basis for calculating wages although it is clear from the minuteness of the piece-rate calculations made by the firm that if their employees were poorly paid it was certainly not in innocence. The company claimed at the outset that the girls were very quick workers and could earn 12-14 shillings a week. During the dispute, they stated that the girls could earn 'from 15 to 25 per cent more than the same class of girls in any other industry in the East-end', whereas the Fabians claimed that factory wages ranged from 4s (for a girl of 16) to 9s per week.

While the dispute was in progress, it was inevitable that distorted claims would be made to try to influence the course of events. With the passing of time, however, must come a legitimate expectation of objectivity. Beaver, in *The Match Makers: the Story of Bryant and May* states that 'most of the charges levelled against the company were without foundation', that the dispute was only 'in theory' about low wages and that 'the average potential wage at Fairfield Works was 11s 2d (56p) a week which, for a factory worker, was a very good wage indeed. He also states that 'as this was earned by piece work, what the match-girls actually received depended largely on their own industry and in this they were well known to be erratic'. Finally, he identifies the unusual seasonal factor concerning the poor hop and fruit crops in 1888 and Bryant

and May's response as one of sharing out the amount of available work instead of laying off workers, even if it meant that 'wages were reduced and some hardship resulted. This was the main cause for the strike of the match-girls'.<sup>39</sup>

According to Rose, however, the weekly wages of the Victoria factory girls, B&M's highest paid female workers, averaged 6s 3d, as against 5s elsewhere in the firm's other factories (Rose, 1996, p. 101). The archival records contain a strike register giving details of the name and address of each worker (male as well as female) on strike and their wage the previous week; an analysis of the register precisely confirms Rose's figure.<sup>40</sup>

It is difficult to quantify the effects of unusual seasonal factors on wages in 1888, although the internal profit and loss accounts for B&M show wages at Fairfield as being stable across the period 1887-89:

Calendar year	Fairfield wages	Fairfield turnover
1887	£23,839	£472,700
1888	£24,635	£441,400
1889	£24,848	£445,500. <sup>41</sup>

There is no suggestion from this that wages at B&M were any lower in 1888 than usual, although the data cannot, of course, indicate whether or not the wages from hop-picking were lower than usual. If, however, the 1888 Fairfield wages figure is divided by the number of employees cited in contemporary reports (1400), the result is an average weekly wage of 6s 9d, which would suggest that the wages in the week preceding the strike may not have been all that atypical of the long-term position.<sup>42</sup> Beaver's comment that the girls were 'known to be erratic' conflicts with the company's own statements at the time that the girls were quick workers and his 'average potential wage at Fairfield Works' (emphasis added) of 11s 2d is in fact 65 per cent above the average wage as calculated above. An examination of the strike register shows two male 'handers outs' on 11s a week as the only employees in the factory who received a wage of more than 10s a week in the week preceding their

strike and the highest paid woman at the Victoria factory as receiving a wage the previous week of only 8s 4d.

The company's statements that their girls could earn 12-14 shillings a week, 15 to 25 per cent more than the same class of girls in any other industry in the East-end would itself suggest a best wage elsewhere of at least 10s 5d, two-thirds as much again as the Victoria factory womens' wage. Shortly after the dispute was over, from July 1889, both the managing directors had their pay raised to £2000 a year, almost 125 times the average female wage in the Victoria factory.<sup>43</sup>

## V

The match-girls strike at Bryant and May's factory also provided an important component in Gallhofer and Haslam's argument that accounting functioned as an emancipatory mechanism during the nineteenth century.<sup>44</sup> Thus, in contrast with analyses that see accounting as 'shaped and captured by hegemonic forces, thus serving the relatively powerful' and as 'serving capitalistic forces in tensions between capital and labour interests', wherein there is the 'danger that accounting is simply appreciated as a crude reflection of the interests of prevailing and basically repressive forces', Gallhofer and Haslam seek to reveal 'accounting's potential to function more on behalf of the relatively oppressed and to serve an emancipatory project'.<sup>45</sup> More specifically, they claim that accounting was mobilised by socialist agitators of the late nineteenth century, including Henry Champion and Annie Besant, that 'accounting disclosure was a focus of the strategy' of Besant and her colleagues and that accounting reports of firms such as Bryant and May, published in the financial pages of the press, attained an 'aura of facticity giving them a particular weight' in industrial disputes.<sup>46</sup>

Some difficulties arise in connection with this line of argument. Firstly, apart from one reference to the company's reserves<sup>47</sup> the claims that 'accounting disclosure was a focus of the strategy' of Champion and Besant seems to rely upon the fact that accounting profits were very similar in amount to dividends during the nineteenth century. The claims of Champion and Besant were indeed based upon the frequent juxtaposition of wage levels (being the income from the company of individual

workers) with dividends (being the income from the company of the shareholders as a whole) and these were certainly used as ‘important facts’ consistent with the tradition in late Victorian England of looking to ‘a proper knowledge of the “facts” [to] help the process of overcoming poverty and poor conditions’, consistent with Gallhofer and Haslam’s overall argument, although it is a moot point as to whether the ability to make this juxtaposition (and be believed) derived from the statements and practices of accounting as a (recently professionalised) activity or to essential features of limited liability as a capitalist mechanism duly sanctioned by the state.<sup>48</sup>

In some ways the accounting practices of Bryant and May Ltd were extremely unhelpful to Gallhofer and Haslam’s argument that accounting reports, as published in the financial pages of the press, attained an ‘aura of facticity giving them a particular weight’ in industrial disputes, since B&M’s published accounts were notoriously lacking in detail. The company’s articles of association actually stipulated that no trading account should be published and no figures for wages were given.<sup>49</sup> More generally, the company remained resolutely opposed to the publication of information about the commercial nature of their operations; for many years they would publish only the balance sheet and profit and loss appropriation account.<sup>50</sup> In February 1884, Wilberforce Bryant acknowledged criticisms that ‘the balance sheet was a little bare’, but argued that it was better for the shareholders that ‘no such details be given for the benefit of outsiders’ and asked whether they preferred good dividends or ‘elaborate reports, bristling with all sorts of statistics which the public have no right to see’?<sup>51</sup> Even after the match-girls strike was over, in 1890, criticisms continued that B&M’s annual reports were ‘the most cynically meagre and imperfect documents published by any board in the country, not even excepting the managers of the Cardiff “ocean tramps”’!<sup>52</sup>

Annie Besant, in her ‘White Slavery’ article, had asked dramatically if anyone cared whether the match girls died or went on the streets, ‘provided only that the Bryant and May shareholders get their twenty-three per cent’, but her claim was actually based erroneously on the dividend declared in the second half of 1887 (at an annualised rate of 22.5 per cent) rather than on the dividend level for 1886 or 1887 as a whole, which was clearly 20 per cent in each case (and would be 17.5 per cent in 1888 and 1889).<sup>53</sup>



## VI

The attention of the medical profession had first been drawn to phosphorus necrosis in 1838. It was a common problem in the match industry, which in 1870 used nearly all the phosphorus produced in Britain; the melting of the substance, and the later drying of the dipped matches, continually gave off fumes of phosphoric acid that caused the dental and facial ravages widely known as ‘phossy-jaw’.<sup>54</sup> The initial symptoms were no worse than influenza but could be followed by a tooth-ache that spread to the whole of the upper and lower jaws. The throat-glands would swell and abscesses form on the inflamed gums, then to discharge loathsome and putrid matter. The teeth became loose, fell out, holes formed in the gums and in some cases the whole cheek-bone and throat would be attacked and eaten away. The London Hospital at Whitechapel became particularly expert at treating jaw and skin cancer through ‘dealing with the constant stream of victims from the match factories’.<sup>55</sup>

While only a shift to the use of red phosphorus and/or mechanised processes could eliminate phosphorus necrosis as an industrial disease, ventilation helped to reduce its incidence. In general, the problem was much worse in the small manufacturing shops, where it was difficult to separate noxious from other processes, than in the larger establishments.<sup>56</sup> The East End factory of Bell and Co did not apparently experience a single case of necrosis in fifteen years, perhaps because the dangerous ‘mixing’ process and the dipping of the matches into the compound were carried out on the roof, so that the fumes quickly dispersed. At Bryant and May’s, however, production was not organised in this way and they decided on medical and dental supervision, on separating dangerous and non-dangerous processes as far as possible and on the ventilation of factory rooms (even though the latter was not carried-out very systematically) as the best means of dealing with the problem.<sup>57</sup>

During the match-girls strike the company had asserted that their girls were robust and healthy, rather than half-starved and wretched but, in January 1892, the radical newspaper, the *Star*, gave details of a case of necrosis at B&M, whose shareholders included the Prime Minister, Lord Salisbury. The employee concerned, a Mrs Fleet, had worked at B&M for five years and had suffered appalling injuries. After she contracted the disease, the company paid her £1 a week to stay at home, which she

said was the standard amount they ‘give all the girls that gets it’, for 31 weeks until the company doctor declared her ‘cured’, although she could not then get a job in the industry as firms would not employ women who bore the unmistakable signs of necrosis in case their physical appearance frightened other workers.

The newspaper report stressed that necrosis was hardly known at other East End factories, unlike at B&M where the dipping rooms were located below the other departments, which could not then properly be insulated from the fumes. The Home Office carried out an investigation and classified lucifer match production as a dangerous trade, to which special rules were to apply, particularly concerning the separation of dangerous processes from other activities. The Home Office did not name Bryant and May as a problem case, even though their investigation had largely confirmed the allegations made against them (including the fact that those with the disease were sent home to be treated by the company’s doctor, rather than attend hospital) although they did require the company to comply with a number of additional regulations, including the immediate reporting of any instances of necrosis to an H M Inspector of Factories’.<sup>58</sup>

The incident was soon forgotten, perhaps because radical newspapers had a small readership and were not always trusted. In April 1898, however, the Star reported a fatal case of necrosis at B&M; the local coroner had determined this as the cause of death and appeared to view the company doctor’s diagnosis of ‘cellulitis’ as a deliberate cover-up. The same newspaper later reported other cases and the claims of a sufferer that her weekly payments had been cut off because she had gone to another doctor.<sup>59</sup>

The Home Secretary, speaking in the Commons, denied the need to ban white phosphorus, since this was the first reported case since 1895, but the Star then released details of further victims and scorned the statement that there had been no other reported cases, given B&M’s policy of keeping sufferers out of their factories and away from the government inspectors. These further revelations prompted another Home Office investigation, during which it became clear that B&M had been involved in deliberate and systematic concealment. The works doctor had reported (at least) 47 cases to the company during the previous twenty years, nine of which had

been fatal (six since 1893) but none had been reported to the proper authorities; instead, positive denials had been given to inspectors that any cases of poisoning had occurred.

On 1 June the company was prosecuted for the three recent offences that fell within the six-month statute of limitations of failing to report phosphorus necrosis, as required under the Factory Act 1895. In his evidence the factory inspector accused B&M of the deliberate concealment of seventeen cases since 1893, six of which had proved fatal and the firm said they were 'extremely sorry' and were fined the maximum amount, with costs, of £25 9s.<sup>60</sup>

Comment in the press was extremely negative and particular concerns were expressed over the way 'factory inspectors, certifying surgeons, the Home Office and the public had been hoodwinked for five years'. The Leeds Mercury said that 'seldom had a worse breach of the Factory Acts come to light' and thought the offence aggravated by the way the firm had 'long posed as a model one'. The Daily Chronicle described it as 'one of the worst breaches of the Factory Acts ever brought into court', while the Yorkshire Post argued that, for a firm able to pay dividends of 17.5 to 20 per cent, to 'stoop to practices of the kind they have been convicted of shows how far men may go in their fear of official interference which may affect their profits'.

Statements made after the case was over, reveal that the firm's intention throughout had been to defend its reputation as a 'model company which cared for its employees' and to suppress public awareness of the dangers of the lucifer match trade. The managing director, Mr Bartholomew, took full responsibility and claimed that the company took 'every possible care of its workforce' but were vulnerable to the exaggeration and magnification 'in every possible way' of any case of necrosis that occurred. He continued to assert that there had been only 47 cases of necrosis of the jaw in the last twenty years, during which some 50,000 people had been employed, despite considerable scepticism, with six proven deaths in five years during which special rules had been in place, that there should have only been another three deaths in the previous (lightly-regulated) fifteen years.

The managing director also pointed out that Bryant and May had been the first to introduce and ‘had for many years invited consumers all over the world to use’ safety matches tipped with the non-poisonous red phosphorus, although they could see ‘not the slightest reason for doing away with the use of white phosphorus’ or why a manufacture that the public had become used to and demanded should be banned.<sup>61</sup> The company’s concern for consumer choice was, of course, less than disinterested, as their prosperity was largely based on the strike-anywhere trade, while the government had been less than wholeheartedly protective of employee interests and were well aware that a ban on Lucifer match production would cost British firms a (large) share of the overseas market and also adversely affect employment in the politically sensitive East End of London.<sup>62</sup>

Although much of the academic literature has been very critical of the company’s approach to ‘phossy-jaw’ (see above) the company has been exonerated from substantial criticism by two sources in the business history literature. Beaver cites contemporary newspaper reports that ‘most of the girls seemed to be remarkably well nurtured and many of them had bright rosy cheeks ... each department was so well ventilated that the fumes from the sulphur and other concoctions used in the manufacture of the goods were hardly noticeable, even to a stranger [and that] ... it is evident that the foremen are esteemed as well as obeyed by the hands’. Further, in the section of the book headed ‘Important developments 1888-1901’, there is no mention of the company’s deliberate breaches of the Factory Act requirements of 1898, despite the considerable publicity (and criticism) this produced, or of the extent to which the disease was present at the factory and the effects of this on the government’s position towards the trade! Instead, Beaver states that ‘even Tom Mann, trade unionist and communist had nothing but praise for the measures taken at Bryant & Mays to combat the disease’ and says the London United Workmen’s Committee was ‘both surprised and pleased at the precautions taken to prevent ... necrosis and found that every requirement of the Factory Acts and special rules had been more than fully complied with, as well as everything that had been suggested from outside, which was calculated to conduce to the welfare of the workers’. Further, ‘to prevent even isolated cases of the disease, the company commissioned a Mr H. H. Drake to produce ideas to combat it’.<sup>63</sup>

Similarly, Wilberforce Byant's business biographer describes the B&M factory as 'well laid-out and ventilated' (which it was before 'demands for lucifer matches led to an extra story being added on top, destroying the ventilation').<sup>64</sup> The same source also states that the 'arrangements for the health and comfort of the workpeople received favourable comment in the report of the 1862 Royal Commission on the Employment of Children in Industry' and that a 'deputation from the London United Workmen's Committee in 1898 learned that during the previous 20 years, only 47 cases of the industrial disease 'phossy-jaw' had occurred there, of which over 80 per cent had been fully cured and the others well looked after by the company'.<sup>65</sup> The severity of the disease, the fact that the sufferers' breath at night could be 'luminous with phosphorus fumes' and that the inhalation of fumes as the girls' pressed the soft, newly-made matches into boxes meant that, at the 'slightest defect in the enamel of the teeth, the phosphorus eats in, gnaws away inside the tooth and gets down to the jawbone, which gradually becomes rotten and putrid' is not mentioned, nor is the connection between B&M's willingness to 'look after' the sufferers and their desire to keep cases out of the public eye.<sup>66</sup>

## VII

Bryant and May was a pioneering, innovative and important member of the match trade. In 1850 they entered into an agreement to become the British agents for the strike-anywhere (lucifer) matches of Carl and Johan Lundstrom of Sweden, in 1855 they bought the British patent rights to the safety matches of their Swedish suppliers, in 1861 they began to manufacture their own safety matches and then lucifers on a huge scale that led to the expansion and reorganisation of their trade. During this period of early manufacture, in 1863-65, the partnership business was able to earn extraordinarily high returns on net assets, of 41.6% in 1863, 52.2% in 1864 and 44.2% in 1865.<sup>67</sup>

The considerable expansion of the scale of business facilitated the gradual intensification of the production process, with measured output and pay based on the amounts actually produced and considerable investments in machinery that would save labour time, although without fundamental change to the labour-intensive nature of the production process. Continuing expansion required amounts of capital that were

beyond the resources of the active members of the Bryant family and, in June 1884, the partnership sold its assets, notably the four distinct factories and numerous outbuildings covering five acres that comprised the Fairfield Works, to a limited company. During the next fifteen years, in which the business began to lose its innovative edge before its merger with the technologically advanced Diamond Match Company of America in 1901, Bryant and May Ltd was involved in three of the major industrial relations issues of the nineteenth century; the ‘sweating’ of domestic out-workers who made match-boxes for the firm, the ‘match-girls strike’ of 1888 and the use of production methods that caused a number of its employees to contract ‘phossy-jaw’, leading to the company’s prosecution under the Factory Acts in 1898.

A general ‘hardening [of] employer attitudes’ after 1880, as profits fell and technology changed, towards wages, de-skilling and work-organisation’ was perhaps to be expected, but at Bryant and May the circumstances were rather different.<sup>68</sup> The balance sheets of the company, over the period 1884-99, are shown in Table 1, the profit and loss accounts in Table 2 and standard profitability measures and factor returns, as a subdivision of total value added, in Table 3. The published and internal accounts were consistent, although the amount of information provided in the published profit and loss accounts was very limited. The data set out in Table 2 and on which the data in Table 3 is based, is accordingly drawn from the internal records of the company, which show costs and revenues for both the business as a whole and for the Fairfield Works in particular.

The business was almost entirely funded by its shareholders, with the use of debenture finance confined to the first years of incorporation and bank overdrafts not needed (see Table 1). Of the three major industrial relations issues considered above, two were general to the period 1884-99 but the other, the match-girls strike, was confined to 1888. Across the period from mid-1884 to the end of 1899, the company provided dividends on ordinary shares that averaged 17.1 per cent and earned returns on capital, as conventionally defined, of just over 12 per cent that varied little from 1886 onwards (see Table 3). These returns in fact probably understate the profitability of the business, since the agreed valuation of £250,000 at which the joint stock company purchased the assets in 1884 would, in the case of such a highly-profitable business, almost certainly have been ‘watered’ or inflated. The returns of Bryant and May Ltd

were clearly substantial and do not suggest that the incidence of the ‘sweating’ of domestic out-workers who made match-boxes for the firm or of ‘phossy-jaw’ could possibly be attributed to low or falling profit margins. The proportion of the value added by the firm paid as wages and salaries averaged just under 40 per cent, with some tendency to increase from 1893. Dividends averaged over 55 per cent and were above 60 per cent of total value added only in the years 1886-89 (see Table 3).

The third major industrial relations issue, the match-girls strike of 1888 relates to a much shorter period of time.<sup>69</sup> As the company chairman admitted in early 1889, the match-girls strike had ‘entailed expense and brought about for a time a slight diminution in their business [but had] now settled down’.<sup>70</sup> In 1886 and 1887, the profitability of the business was at its highest point of the period 1884-99, which ever of the three measures is used (see Table 3) and was materially above the long-run average for the period. Net profits at the Fairfield Works alone in absolute terms were somewhat lower than they would be in 1890-92, but higher than in any other years in the period (see Table 2). Again, there is nothing to suggest that the origins of the match-girls strike lay in low or falling profits. Instead, it seems that it was public awareness of high dividend rates, cleverly heightened by members of the Fabians, that brought most pressure to bear on company directors to change their disciplining practices towards the match-girls, particularly since they were well aware that these changes, however important to employee-employer relationships, would have virtually no effect on the profitability of their future operations.

Eventually, in the twentieth century, the potential impact of integrated match-making technologies on company profit levels would persuade the directors of Bryant and May of the need to treat their employees with more consideration. In the late nineteenth century, however, even if the directors would occasionally talk of the benefits of co-operation between labour and management,<sup>71</sup> a combative approach to employee relations was adopted because it was believed to be causal of high profits, not because Bryant and May’s directors were under the pressure of low profitability.

## NOTES

### Sources : archival holdings

#### Hackney Archives:

- Bryant and May partnership D/B/BRY/1/1
  - account book /13
  - correspondence /9
  - specification of factory at Fairfield, Bow /51
- Bryant and May Ltd D/B/BRY/1/2
  - balance sheets and trading accounts 1886-1927 /107-15
  - balance sheet schedules 1902-1927 /124-57
  - financial schedules 1901-21 /314
  - minutes of directors 1884-1927 /13-18
  - minutes of general meetings 1884-1927 /33
  - printed reports and accounts 1884-1927 /106
  - private ledger 1886-89 /204
  - sundry cuttings and pamphlets 1852-1923 /542-71, 626-38, 925

#### Tower Hamlets Reference Library:

- History of Fairfield Works and Bow Site 670.1
- Match Girls Strike Register, 333
- Study pack, 333

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**Table 1: Bryant and May Ltd Balance Sheets (as published), 1884-99**

31 December	<u>1884</u>	<u>1885</u>	<u>1886</u>	<u>1887</u>	<u>1888</u>	<u>1889</u>	<u>1890</u>	<u>1891</u>	<u>1892</u>	<u>1893</u>	<u>1894</u>	<u>1895</u>	<u>1896</u>	<u>1897</u>	<u>1898</u>	<u>1899</u>
Ordinary shares	300.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0
Capital reserve fund	10.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0
Retained profits	2.5	2.7	2.9	3.1	2.8	2.4	3.1	7.6	8.3	5.1	3.2	5.5	5.8	2.8	6.4	8.0
Shareholders interest	310.0	560.0	560.0	560.0	560.0	560.0	560.0	560.0	560.0	560.0	560.0	560.0	560.0	560.0	560.0	560.0
Fixed assets	278.5	275.0	279.5	277.5	276.5	277.5	279.5	281.0	289.0	289.0	288.0	281.5	281.5	281.5	281.5	281.0
Investments (see CRF)		10.0	158.2	159.2	159.7	156.0	161.0	161.0	160.8	152.8	153.4	161.1	161.3	161.6	161.6	162.0
	278.5	285.0	437.7	436.7	436.2	433.5	440.5	442.0	449.8	441.8	441.4	442.6	442.8	443.1	443.1	443.0
Stock	135.0	148.3	107.6	72.6	82.1	87.6	81.4	95.2	103.0	124.6	110.3	88.7	87.0	106.0	106.0	97.0
Debtors	84.2	401.6	81.7	83.0	80.5	82.9	89.4	84.3	107.3	91.0	83.0	74.3	75.3	72.1	69.8	84.0
Cash	15.7	43.5	21.5	48.2	34.8	31.8	37.1	28.6	18.6	16.0	12.7	30.5	33.1	14.3	10.8	3.0
	513.4	834.9	648.5	640.5	633.6	635.8	648.4	650.1	678.7	673.4	647.4	636.1	638.2	635.5	629.7	627.0
less creditors	-50.9	-158.2	-84.0	-77.4	-70.8	-73.4	-85.3	-82.5	-110.4	-108.3	-84.2	-70.6	-72.4	-72.7	-63.3	-59.0
less debentures	-150.0	-157.5	-1.6													
	312.5	519.2	562.9	563.1	562.8	562.4	563.1	567.6	568.3	565.1	563.2	565.5	565.8	562.8	566.4	568.0

**Table 2: Bryant and May Ltd Profit and Loss Accounts (internal), 1884-95**

(half-year)																
Years to 31																
December	<u>1884</u>	<u>1885</u>	<u>1886</u>	<u>1887</u>	<u>1888</u>	<u>1889</u>	<u>1890</u>	<u>1891</u>	<u>1892</u>	<u>1893</u>	<u>1894</u>	<u>1895</u>	<u>1896</u>	<u>1897</u>	<u>1898</u>	<u>1899</u>
<b>Fairfield:</b>																
Sales	205.5	472.7	505.9	470.7	441.4	445.5	483.8	504.2	469.1	461.1	465.8	478.7	484.9	477.4	458.2	462.7
CoGS	142.5	339.2	292.3	270.5	252.1	248.7	-271.3	-273.6	-242.7	-237.7	-240.2	-246.5	238.9	233.2	223.5	-226.7
Wages	-10.7	-22.0	-26.1	-23.8	-24.6	-24.8	-28.0	-30.0	-29.8	-29.4	-28.8	-29.9	-31.8	-33.5	-31.3	-33.2
Gross profits	52.3	111.5	187.5	176.4	164.7	172.0	184.5	200.6	196.6	194.0	196.8	202.3	214.2	210.7	203.4	202.8
Salaries	-4.8	-14.4	-12.9	-13.9	-12.2	-12.3	-11.8	-12.3	-12.5	-12.6	-12.6	-12.5	-13.0	-13.5	-13.7	-13.7
Other exp	-17.6	-44.9	-98.8	-89.8	-87.1	-90.1	-96.3	-108.3	-110.1	-115.7	-120.2	-121.1	129.0	126.5	122.6	-124.3
Net profit	29.9	52.2	75.8	72.7	65.4	69.6	76.4	80.0	74.0	65.7	64.0	68.7	72.2	70.7	67.1	64.8
<b>Whole firm:</b>																
Sales	247.9	544.7	581.0	524.5	477.0	480.9	520.1	539.7	504.8	499.6	504.1	514.4	520.2	513.2	490.0	492.3
CoGS	168.8	385.6	336.4	299.3	276.2	277.7	-300.4	-300.7	-269.5	-265.8	-269.8	-274.0	265.6	260.2	246.8	-248.4
Wages	-15.2	-30.0	-35.8	-31.6	-30.4	-30.8	-32.8	-34.9	-34.6	-34.7	-33.8	-34.3	-36.1	-37.8	-35.8	-37.4
Gross profit	63.9	129.1	208.8	193.6	170.4	172.4	186.9	204.1	200.7	199.1	200.5	206.1	218.5	215.2	207.5	206.5
Investment income			7.1	9.7	13.7	11.6	4.7	8.0	8.1	5.9	8.7	13.7	8.2	6.4	7.4	7.3
Salaries	-6.0	-17.0	-15.8	-16.6	-13.8	-14.0	-13.4	-13.5	-13.8	-13.9	-13.9	-13.8	-14.2	-14.8	-15.0	-15.0
Advertising	-2.0	-4.8	-5.4	-6.2	-7.5	-9.6	-11.8	-10.7	-12.2	-13.8	-16.6	-15.5	-18.7	-18.5	-19.7	-19.7
Directors fees	-3.0	-6.0	-6.0	-6.0	-7.0	-6.5	-6.5	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0
Depreciation	-1.4	-42.5		-3.1	-1.5	-0.2	-0.2	-2.8	-2.0	-2.3	-0.3	-1.2	-1.8	-1.9	-0.9	-0.3
Other net expenses	-19.8	-33.6	101.4	-81.5	-70.9	-72.5	-84.3	-94.6	-94.0	-99.3	-98.6	-95.3	105.5	105.0	100.3	-107.4
	35.5	33.8	81.2	80.4	69.7	69.9	71.7	74.9	71.6	62.3	63.7	72.5	70.5	67.3	64.8	63.1
Interest paid	-3.8	-8.6	-1.0	-0.2	0.0	-0.3	-1.0	-0.4	-0.9	-0.5	-0.6	-0.2	-0.2	-0.3	-1.2	-1.0
Net profit	31.7	25.2	80.2	80.2	69.7	69.6	70.7	74.5	70.7	61.8	63.1	72.3	70.3	67.0	63.6	62.1
Ordinary dividends	-18.0	-67.5	-80.0	-80.0	-70.0	-70.0	-70.0	-70.0	-70.0	-65.0	-65.0	-70.0	-70.0	-70.0	-60.0	-60.0
Capital issue costs	-1.2	-7.5														
Reserve fund transfer	-10.0	50.0														
Years Retentions	2.5	0.2	0.2	0.2	-0.3	-0.4	0.7	4.5	0.7	-3.2	-1.9	2.3	0.3	-3.0	3.6	2.1

**Table 3: Bryant and May Ltd Profitability and Factor Returns, 1884-99**

	<u>1884</u>	<u>1885</u>	<u>1886</u>	<u>1887</u>	<u>1888</u>	<u>1889</u>	<u>1890</u>	<u>1891</u>	<u>1892</u>	<u>1893</u>	<u>1894</u>	<u>1895</u>	<u>1896</u>	<u>1897</u>	<u>1898</u>	<u>1899</u>	<u>Ave</u>
<b>PROFITABILITY:</b>																	
PBIT/Cap Employed	7.7	4.7	14.5	14.4	12.4	12.5	12.8	13.4	12.8	11.1	11.4	12.9	12.6	12.0	11.6	11.3	12.1
PBT/Equity	10.2	4.5	14.3	14.3	12.4	12.4	12.6	13.3	12.6	11.0	11.3	12.9	12.6	12.0	11.4	11.1	12.2
Ord dividends (%)	6.0	16.9	20.0	20.0	17.5	17.5	17.5	17.5	17.5	16.3	16.3	17.5	17.5	17.5	15.0	15.0	17.1
<b>FACTOR RETURNS:</b>																	
Shareholder dividends	18.0	67.5	80.0	80.0	70.0	70.0	70.0	70.0	70.0	65.0	65.0	70.0	70.0	70.0	60.0	60.0	68.1
Retentions inc deprec	3.9	42.7	0.2	3.3	1.2	-0.2	0.9	7.3	2.7	-0.9	-1.6	3.5	2.1	-1.1	4.5	2.4	4.6
Lenders interest	3.8	8.6	1.0	0.2	0.0	0.3	1.0	0.4	0.9	0.5	0.6	0.2	0.2	0.3	1.2	1.0	1.3
Wages and salaries	21.2	47.0	51.6	48.2	44.2	44.8	46.2	48.4	48.4	48.6	47.7	48.1	50.3	52.6	50.8	52.4	48.4
Total value added	46.9	165.8	132.8	131.7	115.4	114.9	118.1	126.1	122.0	113.2	111.7	121.8	122.6	121.8	116.5	115.8	122.4
<b>FACTOR RETURNS (%)</b>																	
Shareholder dividends	38.4	40.7	60.2	60.8	60.6	60.9	59.2	55.5	57.4	57.4	58.2	57.5	57.1	57.5	51.5	51.8	55.6
Retentions inc deprec	8.3	25.8	0.2	2.5	1.0	-0.2	0.8	5.8	2.2	-0.8	-1.4	2.9	1.7	-0.9	3.9	2.1	3.7
Lenders interest	8.1	5.2	0.8	0.2	0.0	0.3	0.8	0.3	0.7	0.4	0.5	0.2	0.2	0.2	1.0	0.9	1.1
Wages and salaries	45.2	28.3	38.9	36.6	38.3	39.0	39.1	38.4	39.7	42.9	42.7	39.5	41.0	43.2	43.6	45.2	39.6
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

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<sup>1</sup> R. Fitzgerald, 'Employers' labour strategies, industrial welfare and the response to new unionism at Bryant and May, 1888-1930', *Business History*, Vol. 31, (1989) pp. 50-51.

<sup>2</sup> At the AGM in 1887, the directors, 'as practical men' had assured the shareholders that articles appearing in the press, pointing to a 'coming revolution in the match-making industry ... were not worth a moments consideration'; *Investors Guardian* 12 February 1887. In June 1901, the American Diamond company acquired 54.5% of Bryant and May's share capital.

<sup>3</sup> Particularly during and after the First World War.

<sup>4</sup> Fitzgerald, *op. cit.* p. 48.

<sup>5</sup> Although the partnership agreement was not signed until 1843.

<sup>6</sup> In 1851, Bryant contributed £7000 of the capital and May £1000; P Beaver, *The Match Makers: the Story of Bryant and May* (Henry Melland: London, 1985) p. 25; Hackney archives, D/B/BRY/1/1/13.

<sup>7</sup> Hackney archives, D/B/BRY/1/1.

<sup>8</sup> Beaver, *The Match Makers*, p. 34.

<sup>9</sup> L J Satre, 'After the match girls strike: Bryant and May in the 1890s', *Victorian Studies*, Vol 26 (1982), p. 10.

<sup>10</sup> In 1797 the Fairfield site had been an enclosure of meadowland known as 'Gravel Pit Field'. In 1818, it was sold to the East London Water Works Company, then in 1843 to a railway carriage manufacturer and then to the British Sperm Candle, who went into liquidation. In July 1861 the leasehold for the site was assigned to William Bryant. A separate part of the site, used as a crinoline factory, was also taken over, once the match operations had proved a success; Tower Hamlets Reference Library 670.1.

<sup>11</sup> Commission on the Employment of Children in Industry, Appendix to First Report, P.P. 1863, XVIII, p. 57.

<sup>12</sup> Red phosphorus had been obtained from white, by heating it in a closed vessel, in Vienna in 1845.

<sup>13</sup> 1863: 41.6% (on net assets of £4625), 1864: 52.2% (on £6565), 1865: 44.2% (£11915); Hackney archives, D/B/BRY/1/1/13.

<sup>14</sup> The partnership records show May as one of three partners receiving a share of the profits in 1863. In 1864 the only two partners were William and Wilberforce Bryant. The very high rates of profit enabled them to raise their stakes in the business to nearly £5000 by the end of 1865; Hackney archives, D/B/BRY/1/1/13.

<sup>15</sup> A bullying that was to be repeated; T A B Corley, 'How Quakers coped with business success: Quaker industrialists, 1860-1914', in D. Jeremy (ed), *Business and Religion in Britain*, (Gower; Aldershot, 1988), pp. 178-79. The success of the business was to make Wilberforce very prosperous. He later bought the Manor House, a five hundred-acre park at Stoke Poges, becoming a JP and Deputy Lieutenant of Buckinghamshire. He also became a noted collector of Japanese curios, bronzes and china; Hackney archives, D/B/BRY/1/1/9 & 13.

<sup>16</sup> The proposed tax was 1/2d on a box of 100 wooden matches and 1d on a box of 100 vestas; see also the *Times* 25 April 1871, p. 10; S Schama, *A History of Britain: Vol. 3 The Fate of Empire 1776-2000* (BBC, London, 2002), p. 253.

<sup>17</sup> Fitzgerald, 'Employers' labour strategies, pp. 54-55.

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<sup>18</sup> Aggregate directors' remuneration was fixed by the members at no more than two per cent of the capital, or £8000; Hackney archives, D/B/BRY/1/2/13; Investors' Guardian 11 February 1888, p. 130.

<sup>19</sup> William Bryant died in July 1874, one of his sons, Arthur, in 1882 and another, Theodore, left the business in 1883.

<sup>20</sup> Bell and Black's business was bought for £54,490; Investors Guardian, 21 December 1885.

<sup>21</sup> The population in Bow had grown from 3,370 in 1831 to 37,060 fifty years later; F Engels, 'On the London Dock Strike and May 4 in London', in K Marx and F Engels, *Articles in Britain* (Progress: Moscow, 1971), p. 403.

<sup>22</sup> Unidentified newspaper report of the general meeting of the company in late July 1887; Hackney archives D/B/BRY/1/2.

<sup>23</sup> Cassells Saturday Journal (1887), pp. 249-50; R Beer, *Matchgirls Strike 1888* (National Museum of Labour History: London, 1982) p.16.

<sup>24</sup> Beer, *Matchgirls Strike*, pp. 11, 15; M Ball and D Sunderland, *An Economic History of London, 1800-1914* (Routledge: London, 2001), pp. 295, 302; Satre 'After the match girls strike', p. 11.

<sup>25</sup> T McCarthy (ed), *The Great Dock Strike 1889* (Weidenfeld and Nicholson: London, 1968), p. 57.

<sup>26</sup> Beer, *Matchgirls strike*, pp.37-38.

<sup>27</sup> S Gallhofer and J Haslam, *Accounting and Emancipation: some Critical Interventions* (Routledge: London, 2003), p. 76.

<sup>28</sup> Annie Besant had joined the Fabian Society in 1885 and founded a journal, the *Link*, two years later; Gallhofer and Haslam, *op. cit.*, p. 77; Stafford A, *A Match to Fire the Thames* (Hodder and Stoughton: London, 1961], p. 64.

<sup>29</sup> S Boston, *Women Workers and the Trade Unions* (Lawrence and Wishart: London, 1987), p. 48; Stafford, *A Match to Fire*, p. 66.

<sup>30</sup> Weekly wages in the Victoria factory averaged 6s 3d, compared with only 5s for single women working in the wax and box stores and patent factory; G Rose, 'The strike at Bryant and May's match factory, East London, July 1888', in A Charlesworth, D Gilbert, A Randall, H Southall and C Wrigley (eds), *An Atlas of Industrial Protest in Britain, 1750-1990* (Macmillan: Basingstoke, 1996), p. 101; Tower Hamlets Reference Library, 333; Hackney archives D/B/BRY/1/2/13; Satre, 'After the match girls strike', p. 13; Stafford, *A Match to Fire*, pp. 68-73; R Frow, E Frow and M Katanka, *Strikes: a Documentary History* (Knight: London, 1971), p. 102; Schama, *A History of Britain*, p. 253; Gallhofer and Haslam, *Accounting and Emancipation*, p. 82.

<sup>31</sup> There is a detailed account of negotiations as the new machinery was introduced in the *Illustrated London News*, 4 August 1888, p. 126; see also Boston, *Women Workers*, p. 50.

<sup>32</sup> D Rubinstein, *People for the People* (Ithica Press: London, 1973), p. 150; A Taylor, *Annie Besant: a Biography* (Oxford University Press: Oxford, 1992), p. 208.

<sup>33</sup> Taylor, *op. cit.*, p. 211; *Times* 12 July 1888.

<sup>34</sup> Hackney archives, D/B/BRY/1/2/13, 561; Stafford, *A Match to Fire*, p. 78.

<sup>35</sup> Beer, *Matchgirls Strike*, p. 43; Boston, *Women Workers*, p. 47.

<sup>36</sup> The unofficial action was taken against further mechanization; Boston, *op. cit.*, p. 51; C Bolt, *The Womens' Movement in the United States and Britain from the 1790s*

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to the 1920s (Harvester: Hemel Hempstead, 1993), p. 176; T A B Corley, 'How Quakers coped with business success: Quaker industrialists, 1860-1914', in D. Jeremy (ed), *Business and Religion in Britain*, (Gower; Aldershot, 1988), p. 180.

<sup>37</sup> Unidentified newspaper report of the general meeting of the company in late July 1887; Hackney archives D/B/BRY/1/2. The Investors' Guardian of 4 August 1888 reported the meeting but not the more trenchant comments of the directors.

<sup>38</sup> Grocers Journal, 1 February 1889, pp. 15-16; Hackney archives D/B/BRY/1/2/13.

<sup>39</sup> Beaver, *The Match Makers*, pp. 64, 67. Many of the allegations were in fact well-founded, although claims that substantial amounts were deducted from employee's wages to pay for the erection of a statue to Gladstone was a (presumably politically-motivated) fabrication; Investors Guardian, 4 August 1888, pp. 97-99.

<sup>40</sup> The average male wage at the Victoria factory was 7s 4d and the average for the factory workforce 6s 5d.

<sup>41</sup> Hackney archives D/B/BRY/1/2/107

<sup>42</sup> Assuming a 52 week working year; if the divisor is 50 the average wage would be 7s. As an outer bound, even if the wages figure for the whole firm were used (£30,425), the average wage would still be only 8s 4d.

<sup>43</sup> Minutes of Directors Meeting 12 July 1889; Hackney archives, D/B/BRY/1/2/13. This would be equivalent in present-day terms to a wage of (say) £18,000 a year and a director's salary of £2,250,000. In February 1888, the company's shareholders had approved a proposal, *nem. con.* that the total remuneration of the board of directors should be no more than 2% of capital; Investors Guardian 11 February 1888, p. 130.

<sup>44</sup> See Gallhofer and Haslam, *Accounting and Emancipation*, particularly pp. 71-90.

<sup>45</sup> Gallhofer and Haslam, *op. cit.*, p. 66.

<sup>46</sup> Gallhofer and Haslam, *op. cit.*, p. 70

<sup>47</sup> Gallhofer and Haslam, *op. cit.*, p. 74.

<sup>48</sup> Gallhofer and Haslam *op. cit.*, pp. 66, 70, 89.

<sup>49</sup> Grocers Journal, 1 February 1889, p. 16.

<sup>50</sup> Gallhofer and Haslam, *op. cit.*, p. 181.

<sup>51</sup> Hackney archives, D/B/BRY/1/2/33.

<sup>52</sup> City Leader, 1 February 1890; Corley, 'How Quakers Coped', p. 179.

<sup>53</sup> Hackney archives, D/B/BRY/1/2/106-07, 204, Investors Guardian 11 February 1888.

<sup>54</sup> M Berg, *Technology and Toil in Nineteenth Century Britain* (CSE Books: London, 1979), p. 240.

<sup>55</sup> 'Great Industries in Great Britain, Health and Disease in Industrial Occupations', circa 1880, cited in O Bennett, Annie Besant (Hamish Hamilton: London, 1988), p. 44; see also Satre, 'After the match girls', p. 9; T McCarthy (ed), *The Great Dock Strike 1889* (Weidenfeld and Nicholson: London, 1968), p. 58.

<sup>56</sup> Berg, *Technology and Toil*, p. 240.

<sup>57</sup> Beer, *Match Girls Strike*, p. 28.

<sup>58</sup> Satre, 'After the match girls strike', pp. 15-19. The statement in Cassell's Saturday Journal in 1887 (pp. 249-50) that the buildings at Fairfield were 'fireproof and scientifically ventilated' was presumably a presentation of the company's own perspective.

<sup>59</sup> Star, 3 May 1898, p. 2.

<sup>60</sup> Star, 4 June 1898, p.2; Satre, 'After the match girls strike', pp. 20-24.

<sup>61</sup> Hackney archives D/B/BRY/1/2/568.

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<sup>62</sup> 360 million boxes of strike-anywhere matches were produced at the Fairfield Works in 1891, as against 52 million boxes of safeties, 23 million vesuvians and 105 million wax-vestas.

<sup>63</sup> Beaver, *The Match Makers*, pp. 67-69.

<sup>64</sup> D J Jeremy (ed) *Dictionary of Business Biography*, Vol 1, (Butterworths, London, 1984), pp. 488-89; McCarthy, *The Great Dock Strike*, p. 57.

<sup>65</sup> Jeremy, *Dictionary of Business*, pp. 488-89.

<sup>66</sup> Hackney archives D/B/BRY/1/2/568.

<sup>67</sup> Hackney archives, D/B/BRY/1/1/13.

<sup>68</sup> Fitzgerald, *op. cit.* p. 48.

<sup>69</sup> There had been an earlier, short-lived and unsuccessful strike in 1885, which concerned rather different issues.

<sup>70</sup> *Grocers Journal*, 1 February 1889, p. 15.

<sup>71</sup> At the annual general meeting in February 1885, one shareholder suggested that the 'spirit of co-operation' mentioned by the Chairman could be 'carried a step further and that we should be content with a dividend of ten per cent and let two per cent go to the workers' but the proposal was ruled out of order by the Chairman (AGM 24 February 1885, Hackney archives, D/B/BRY/1/2/33).