

## The Mechanisation of Architectural Woodwork in Britain from the late Eighteenth to the early Twentieth Century, and its Practical, Social and Aesthetic implications. Part IV: The End of an Era

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### Introduction

The fourth and final part of this paper focuses on the cultural consequences of the progressive mechanisation of the woodworking industry during the Victorian and Edwardian periods. Developments in the field, like most aspects of British industrial life at the time, were conditioned by a protracted struggle between two great forces shaping contemporary culture: industrial capitalism and “aesthetic medievalism”.<sup>1</sup> All branches of woodworking were affected, but it is in the domain of the joiners, the cabinetmakers and carvers – where the skill and flair of the individual workman in handling tools to shape the material made distinctions between art and craft problematical – that we come closest to the heart of the conflict. Here we can observe most clearly the nature of the changes that transformed the industry.

### The Artist and the Marketplace

In his book, *Victorian Things*, Asa Briggs observes that “art and technology were never completely separate at any point in Victoria’s reign”.<sup>2</sup> In the increasingly competitive commercial atmosphere of the time the demands for co-operation between these two areas were compelling. Leading architects like Pugin, Barry, Scott and Shaw found it expedient to avail themselves of the superior productive powers of mechanical processes in order to achieve their goals. Similarly the manufacturers of machinery and their industrial clients – under constant threat from international competition – were eager to exploit the enormous commercial potential of machine-produced ornamentation.

Wood, an ubiquitous decorative material in both furniture and building industries, was a natural focus of attention, but the technical difficulties that had to be overcome in order to produce the intricate detail of the

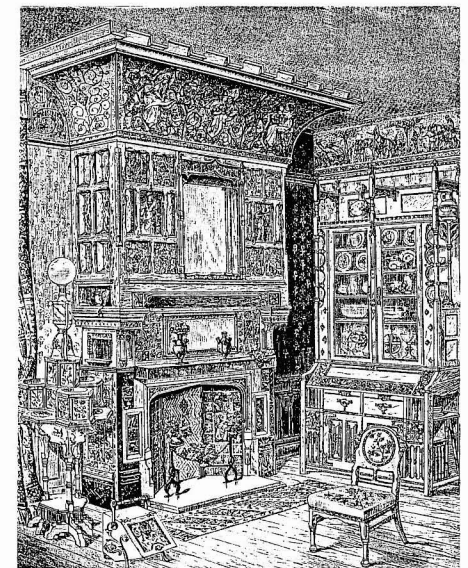


Fig. 1: The display of machine-made furnishings by Messrs. Cox & Sons, Southampton Street, Strand at the Philadelphia Exhibition, 1876. From *The Art Journal* – 38 (1876).

fashionable historic styles economically by machine were formidable. Hence the first commercially viable mechanical woodcarving processes were received with enthusiasm during the 1840s (see Part I (C.H. 8, 1992) and below). The public and professional recognition gained by the initial ventures of Pratt and Jordan encouraged the wider application of such machinery in industry, particularly Jordan's patent. The latter machine achieved considerable commercial success during the 1860s and 1870s, producing (reputedly at a saving of 25%-30%)<sup>3</sup> Gothic ornamentation for a well known furniture and carving establishment, Messrs. Cox & Son of Covent Garden [Fig. 1]. As we have seen in Part II it also became the basis for further technical developments later in the century when there was a revival of interest in mechanical carving.<sup>4</sup> By the 1890s it is interesting to note that the best work of the kind was produced in two ways. One was by British firms using American technology, as in the cases of Harris Lebus's Universal Woodcarving Machine Company employing the famous Moore's Universal Carving Machine,<sup>5</sup> and J.M. Bennett & Sons, Manchester, with the "Goehring" process (both discussed previously). The other was by American firms with British outlets such as Messrs. H. Hermann Ltd of Evansville, Indiana, who established a branch in Limehouse, London in 1877.<sup>6</sup> The latter was probably one of the firms which *The Illustrated Carpenter and Builder* had identified in 1879 as being eager to further the trade in American hardwood joinery.<sup>7</sup> This move tied in with the United States' domination of the British import trade in ready-made joinery, and its influence on the local woodworking tool making industry in general.

For a variety of reasons the production of machine woodcarving could never quite keep pace with the demand for such work. This gave rise to the development of alternative processes producing imitation carving. The first such system in this country, a sophisticated embossing technique, appeared in the early 1840s.<sup>8</sup> The process consisted of patterns being burnt into the surface of wood under pressure with iron mounds. It was limited but it possessed, as *The Art Union* put it in 1848, "the merit of making pleasing copies of their antique models; the charring of the wood imparting a good appearance of age."<sup>9</sup> The greatest attraction of the burnt wood product was however its cost. A report in *The Art Journal* of May 1861 of a visit to G.G. Smith's Ornamental Wood Works, Manchester, noted that, "Panels which could not be produced by the decorative artist at a less cost than forty shillings each are sold at from five to six shillings; and ornamental mouldings, of the most permanent kind, are produced at two-pence the foot run, which no designer could afford to create at less than ten times this cost."<sup>10</sup> Understandably the technique became very popular, which encouraged competition and continuous experiment until the end of the century. The Guattari process (discussed in Part II) was a further, and possibly final, stage in the development of this method.<sup>11</sup>

Fretwork, that is ornamental woodwork cut from flat boards with mechanical band or fret saws, became popular in Britain

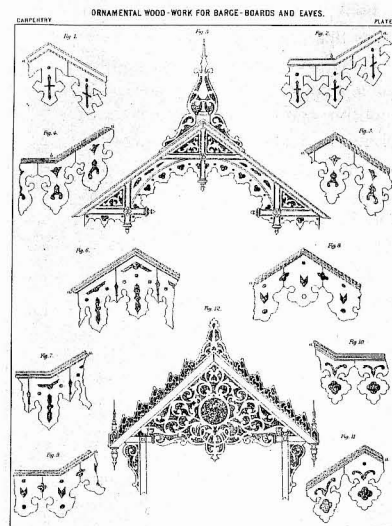


Fig. 2: Examples of ornamental fretwork for bargeboards and eaves displayed at the Universal Exhibition, Paris 1867. From R. Scott Burn (Ed.) *The New Guide to Carpentry, General Framing and* (c.1868-1870).

during the 1870s and 1880s as an economical form of decoration for bargeboards, eaves, brackets and balustrades. The stimulus seems to have been the Paris Universal Exhibition of 1867 where a large quantity of such work was exhibited by British, American and Continental manufacturers. *The New Guide to Carpentry, General Framing and Joinery* (c.1868-1870), edited by the architect R. Scott Burn, carried several sheets of exemplars taken from the Paris show [Fig. 2] as well as the woodworking machinery capable of producing it.<sup>12</sup> C.J. Richardson in *The Englishman's House* (1870) also recommended the use of this kind of decoration and claimed that fretwork barge-boarding was then commonly used in railway stations throughout the country.<sup>13</sup> Mechanical fretwork became hugely popular in the furniture industry during the 1880s, a development fuelled by large-scale imports of cheap and simple fret machines from the U.S.A.<sup>14</sup>

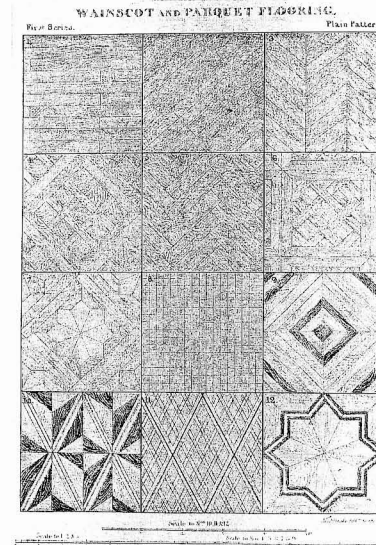


Fig. 3: A sample sheet for machine-produced oak parquetry by Messrs. Steinitz & Co., London. From *The Art Union*, June 1845.

Another innovation of the 1840s which only came into its own later in the century was parquetry. The first machine-made version of this ancient flooring technique was developed by Messrs. Steinitz & Company of London, c.1843, and manufactured at the East London Commercial Saw Mills, Berners Street. According to *The Builder* of 21 October 1843, this mechanical process was, "so perfect that it is possible to sell these under a third of the price of what they would cost were they made by hand." Initially oak was mainly used for the blockwork, but by 1846 a range of geometric patterns was available in a variety of exotic timbers. In addition the firm produced wainscot flooring in regular and zigzag patterns [Fig. 3].<sup>15</sup> Despite general acclaim in the press and some prestigious commissions, including Windsor Castle, the Steinitz floors did not prove a commercial success. The company continued to improve its

products and launched an even more ornamental veneered product in 1859,<sup>16</sup> but even so the technique only became popular after a new technology for its conversion was introduced at the Vienna International Exhibition of 1873. The parquetry machine produced by Messrs. Worssam & Company of Chelsea (mentioned in Part II) was judged the superior of the competing versions at this show<sup>17</sup> and became the basis for subsequent mass-production of such work in this country.

The above mentioned mechanical processes were but a selection of the extensive range available on the late nineteenth century market for "art manufactures". To these must be added the substantial quantities of decorative wooden products turned out by mechanical lathes and moulding machines in numerous factories and workshops throughout the country and imported from abroad; also imitation wood products like pressed wood pulp ornamentation.

Interior decoration had, in effect, become an industry in its own right by the 1870s.<sup>18</sup> The standards were set by large London-based establishments like Messrs. Holland & Son, Howard & Sons and Jackson & Graham, who employed steam machinery and hundreds of craftsmen from different trades to deliver decorative schemes for the interiors of buildings complete in every

respect: materials, design, manufacture and fitting [Fig. 4]. They also provided for a broader architectural market, as did a host of other specialist and general dealers. Their advertisements in the professional press bear testimony to the scope and flexibility of this enterprise culture, as well as to the capacity of its machinery [Fig. 5].

These market conditions presented a challenge to the traditional art and craft establishment which was unique in the annals of woodworking. For the first time in history there was a genuine alternative to handcraft in production at all levels of the industry. This called into question age-old belief – systems and working practices. No longer did the machine affect merely the lower end of the skill-range concerned with the “breaking down” of the material, where much of the work involved strenuous physical labour. It had now also begun to impinge seriously on the creative domain of the artist and craftsmen, and to undermine the position

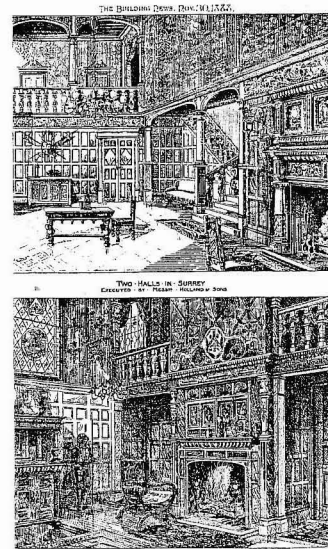


Fig. 4: Two interior schemes executed by Messrs. Holland & Sons, London, for mansions in Surrey. From *The Building News*, 30 November 1888.

of professional designers like architects. A cultural backlash, for which the battle line had been drawn during the eventful twenty years that separate Charles Babbage's *On the Economy of Machinery and Manufacturers* (1833), from John Ruskin's *On the Nature of Gothic* (1853), was unavoidable.

Already in 1835, the architect C.R. Cockerell had warned about the possible impact of mechanisation on the arts:

*"I believe that the attempt to supersede the work of the mind and hand by mechanical process for the sake of economy will always have the effect of degrading and ultimately ruining art."*

This was to remain a common theme in art and architectural debates throughout the nineteenth century, but was an unusually negative position for the period leading up

to the Great Exhibition of 1851. Notwithstanding comments like the above, and the first stirrings of the moral crusade against the use of machinery led by John Ruskin, the argument in favour of the “application of science to the fine and useful arts” seemed conclusive by the late 1840s. The leading art magazine, *The Art Union*, for example, openly supported the mechanical production of such work as parquetry, carving (even imitation carving) on the grounds that “every application, whether it be physical or mechanical, which aims at rendering good Art economical, deserves our most serious attention.”<sup>20</sup> It was particularly impressed with Jordan's carving machine which, as it noted with satisfaction in 1848, was not invented to supplant the artist, merely to amplify his capacity for production. The inventor had done no more, according to this journal, than respond intelligently to the revival of the taste, in decorative architecture, for the ornaments of medieval times.<sup>21</sup> The surprising degree of consensus reached about the benefits of the use of Jordan's machines for decoration on the Houses of Parliament confirms that this optimistic view of the future had wide currency at the time. Even the woodcarvers, who stood to lose most from the introduction of machinery on the project, seem to have had no objections. On the contrary, they looked upon it as an opportunity to break out from the stranglehold of the upholsterers in the furnishing trade.<sup>22</sup>

The greatest anxiety of the art world at this point was not that machinery would take over the role of the artist. It was rather the other way round, namely that – compared to other nations, especially France – the British artists and craftsmen, through a lack of design capabilities, were not suitably equipped to contribute effectively to the creation of high quality products by mechanical means. This was the main issue that had prompted the Commission of Enquiry (1835), and the subsequent Government Schools of Design project.

The Great Exhibition dispelled any remaining doubts in the contemporary mind that Britain was indeed lagging behind the other European nations in terms of the quality of design of her manufactured products. This gave new momentum to the campaign for a national programme of art and design education, the principal achievement of which was the so-called “South Kensington System”, serving a network of art and design schools established throughout the country.<sup>23</sup> The movement to deliver an art education to the British working population took many different forms: exhibitions, day and evening classes, lectures, prizes and even sponsored visits by artisans to international exhibitions (Paris 1867, 1878 and 1889). The most interesting



Fig. 5: Advertisement for ornamental machine-made joinery by Messrs. Howard & Sons. From *The Architects Compendium and Complete Catalogue*, 1896.

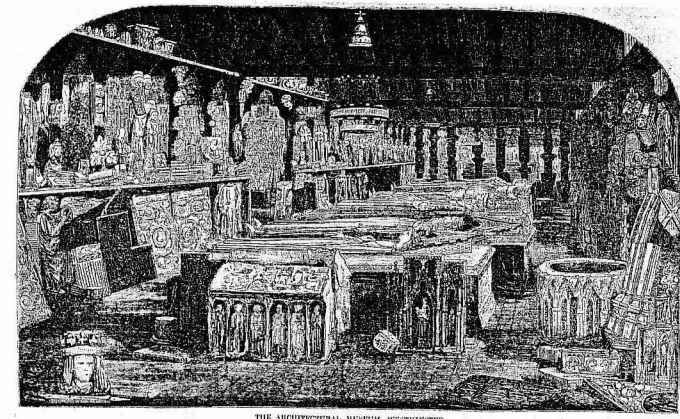


Fig. 6: The Architectural Museum, Canon Row, Westminster. From *The Builder*, June 1854.

development from our point of view was the Architectural Museum, founded in 1851 by a group of leading art patrons and architects. The Architectural Museum was a child of the Gothic Movement which concentrated its efforts on promoting Gothic work from the thirteenth to the fifteenth centuries. It regarded itself primarily as an educational institution, but despite Alexander Beresford-Hope's reference in 1869 to it as "*a machinery to knock details into fellows' brains afterwards to come out at their fingers' ends*,"<sup>24</sup> no training as such was provided to craftsmen. Rather in the manner of the Royal Academy, the Architectural Museum sought to create a stimulating atmosphere where artists, craftsmen and patrons of the arts could meet on equal footing in order to debate matters of common interest, as well as to study specimens of exemplary historic and contemporary architectural ornamentation in its large collections [Fig. 6]. "Architectural art", not "architecture as art", was their objective, as Beresford-Hope pointed out in 1863.<sup>25</sup> He went on to explain the reasons behind the foundation of the Institute: how the growth of "free Art" (Gothic) necessitated a wider field of conventional decoration. And, since the architect had "seldom time to compose", and still less time to "*superintend the elaboration of the minutiae of his designs.....the responsibility fell upon the operative class, the art workman, to whom the details of the structure were confided.*" This, he felt, was a good move because:

*"It was only by teaching these people the dignity of their own vocation, by showing them that they were not merely executives of certain pre-existing diagrams, but ministers of beauty and of gracefulness, active contributions to the whole artistic effect of the structure on which they were engaged – it was only by bringing these thoughts home to them that anything like a real artistic movement in the people could be consummated."*

It was the Architectural Museum's hope, he concluded, that the result of this movement would be to "*convert the art workman into the working artist.*"<sup>26</sup>

However, by the mid 1860s many of these educational ideals had already begun to founder on the harsh reality of commercial and social conditions. The situation deteriorated during the next two decades as Britain continued to slide into another crisis in her industrial economy. One problem was that the working people were not proving to be as receptive to these efforts as the reformers had hoped. Their attendance at organised educational events were sporadic and the quality of entries for the various prizes and exhibitions often poor – much to the embarrassment of the organisers and fuelling the prejudices of those amongst the artistic elite who held that the British workman had no aptitude for design. Simultaneously the art world stood accused of not giving sufficient recognition to those master craftsmen who did actually excel in their work.<sup>27</sup>

Ruskin was one of the few people associated with the Gothic movement who seems to have understood the broader social implications of this development. In a series of public lectures called "The Two Paths" (1858-59) he warned against the futility of gestures of the kind which did not take account of the social context of the craftsmen,<sup>28</sup> but although his views caused some stir no action followed. Of greater public concern was the growing perception that the type of art education provided by the South Kensington establishment was not properly attuned to the needs of industrial production.

Education or training, rather than social reform was still the preferred option, but now the emphasis was shifting away from the arts to science and technology. With the publication in 1884 of an official report by the Royal Commission on Technical Education, critical of the existing nature of art and design education, the transitional phase was, for all practical purposes, over. Despite considerable achievements, the South Kensington System was deemed ineffectual as an educational programme for industry compared with those of other countries. Its critics accused it of having been too narrow in its approach to art, of being too concerned with raising the taste of

the middle classes at the expense of the instruction of artisans and designers in the practical application of art to manufactures and handicrafts. Art teachers, by their "swelling periods and grand imaginings", it was claimed, had led astray designers, craftsmen and manufacturers alike, and were thus partly responsible for the "confused ornamentation and ambitious richness" of contemporary products in the market.<sup>29</sup> After having had, in theory at least, charge of the craftsman's aesthetic education for four decades, artists and especially the architects, were now openly blamed for abandoning them, deskilled and in a state of total stylistic confusion.

The contemporary architect, however, found himself in an equally difficult position. Robbed of professional control in major parts of his traditional domain by engineers, surveyors and interior decorators the architect had turned into, what John D. Sedding in 1884 called, "a paper-draughtsman" who sat on a stool inventing "new sorts of doors and windows."<sup>30</sup> No wonder, as Sedding noted regarding a celebrated debate which took place at the R.I.B.A. in 1874, architects were so "*preposterously alarmed lest the workman should become architects.*" According to Sedding these problems began when the Gothic Revival summarily rejected all past (i.e. Classical) decorative traditions upon which the British craftsman's executive skills at the time were founded, and substituted a new stylistic vocabulary which the craftsmen neither knew anything about, nor cared for. This made the workman wholly dependent for his details upon an "office architect" who himself was struggling in vain to grasp the subtleties of the ancient language in an abstract manner through drawings:

*"You have drowned the English handicrafts by opening up the sluices to a ceaseless tide of archaic types you have muddled his ideas and confused his brain, but you have done nothing to form his taste or settle his standards; you have added no single pet moulding to his tool chest, nor helped him to pigeon-hole a single familiar feature; he has no lasting impression of any piece of work you ever gave him to do.....He is the slave of caprice, the plaything of fickle humours, the sport of mutable taste and veering minds of fashion."*<sup>31</sup>

Whether or not the situation was quite as bleak as Sedding portrayed is perhaps a moot point. Nonetheless it must have been obvious to contemporaries that the high aspirations of the previous generation of reformers for creating a harmonious working relationship between architects and building craftsmen, under the auspices of the Gothic Revival, and in which the workman would enjoy an equal share in the creative process, no longer had any prospect of fulfilment. And like the Gothic style itself, institutions which propagated this cause, notably the Royal Architectural Museum,<sup>32</sup> went into terminal decline.

The coup de grace to the craftsman's individuality within the building process, Sedding claimed in 1887, was delivered by a contractual system which obliged the workman to follow the architect's drawn instructions unquestioningly.<sup>33</sup> The architects, too, were constricted by this commercial arrangement which had entrenched the division of labour concept and separated design from construction. And, as the pace of industrial development accelerated they were increasingly unable to fulfil their contractual duties of supervision and product specification efficiently due to lack of practical knowledge of, and control over, the actual manufacturing process. As *The Building News* explained in 1889:

*"The invention of machinery in the conversion of materials has hindered the direct translation of the architect's design. There are two ways in which it has so operated. The first is by dividing or cutting up material in certain thicknesses to prevent waste, the result of which is that the machinist alters and modifies the architect's design to suit his arrangements; secondly the employment of machinery has encouraged the division of labour, and aimed a death-blow at manual workmanship or the private judgement of the artificer, thereby encouraging repetition and stock patterns."*<sup>34</sup>



The deficiency of this system of procurement was exposed, rather embarrassingly, at the turn of the century with respect to the specification of woodwork for joinery as mechanically converted imported timber and timber products flooded the market and threw the local trade standards into confusion.

These industrial conditions not only raised a question mark over the architect's authority in the building world, causing the profession to start an urgent review of training procedures, it also led to a split in their ranks. This occurred between those for whom architecture was mainly a practical business and those for whom it was essentially an art or, as *The Building News* put it bluntly in 1888, between "Mr Five-per-cent" and "Mr Art-in-the-work".<sup>35</sup> It is from the latter group that the major impetus came for the second (and this time revolutionary) attempt to reunite the artist and craftsman according to an idealised medieval model. We now generally refer to this as the "Arts and Crafts Movement".

The chief aim of the Arts and Crafts Movement was to re-establish handiwork as a genuine alternative, a superior system of production to that achievable through the use of machinery. In order to accomplish this in the workplace the workshop culture of the medieval craft guilds, with its strong architectural bias, was adopted. For a period of three decades, from the formation of the first successful guilds in London in the early 1880s, the theories and products of the Arts and Crafts Movement provided the framework and focus for debates about the relationship between industry and art in this country. Its history is too well rehearsed to need any further elaboration. For the purposes of this paper a brief look at two interrelated aspects of this revolutionary development will suffice: the nature of the "handicraft aesthetic" that was promoted, and the "Art Workers" attitude towards the machine in general.

In the end much of the aesthetic debate came down to the question of "finish" as the ultimate test of quality of the end product. And here the argument has come full circle from the mid-nineteenth century when specimens of machine-made work, for example those produced by Samuel Pratt Junior's machines, were criticised for their "unfinished appearance" which gave the "notion of work left as delivered by a senseless machine."<sup>36</sup> Then, as the testimony of Jordan confirms, the "smoothness of surface and delicacy of finish" of handiwork set the standard.<sup>37</sup> However, as the technology improved the quality of finish of machine work also got better. By the 1870s it was already accepted in the furniture business that for certain categories of work the machine produced the best results. As *The Furniture Gazette* observed in 1873, the question was no longer simply whether the process was mechanical, but whether the end result was "mechanical".<sup>38</sup> For the rebellious art workers two decades later "mechanical" had come to be associated with "smoothness of surface", mass-produced precision with monotony. "The passion of our nineteenth century", the architect Edward Prior observed in 1890, "seems to be for perfection, for neatness and smoothness. In getting the smoothness we have somehow missed the perfection." He went on to argue that it was exactly in the imperfections, the texture of ancient buildings, that their attraction for the modern age lay – qualities which his contemporaries in turn were unable to reproduce because they were using the wrong means:

*"Surely we have no lack of talent for architecture, and we have been careful and intelligent students of our native Gothic Styles; we have rightly considered that they supply forms suited to our needs, but our modern work in these styles, charming as it is, lacks this greatest of charms. It seems to me it only wants to be perfect. But how can a thirteenth-century moulding escape railroad fluency? How can tooth ornament and half-leafage escape lifelessness, cut out by the hundred from one full-sized detail, instead of springing direct from the tool of the craftsman? The so-called discoveries, announced almost daily, which promise to us at half the cost the sumptuous effects of ancient art, are found to keep their promise at the expense of Texture. They are always deficient in the one quality which was the magic of the old."*<sup>39</sup>

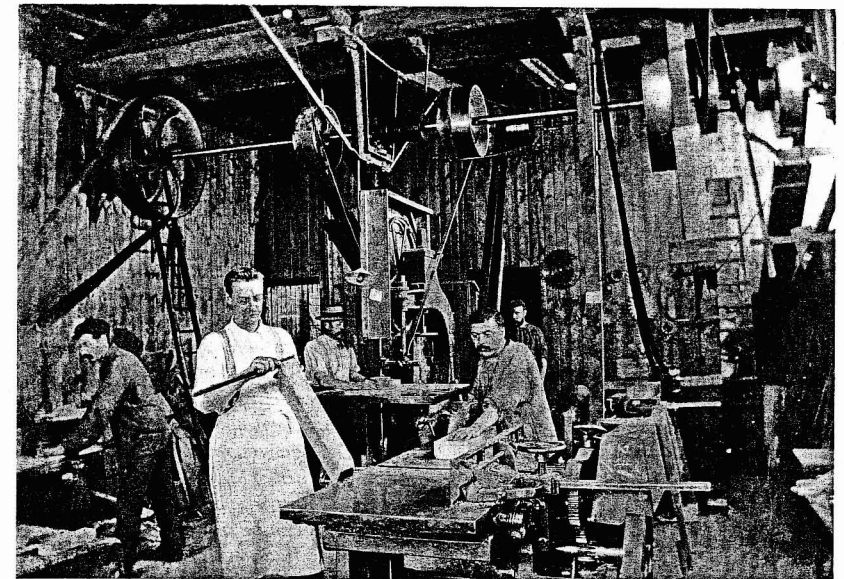


Fig. 7: Woodworking machinery in use at The Guild of Handicraft's base at Chipping Campden c.1902-1908. A contemporary photograph.

It was a dilemma for which the Arts and Crafts Movement could foresee only one viable solution, a rejection of mechanised production and all it stood for, and a return to the working practices of the medieval craft guilds. And, while economic realities eventually caused them to adopt machinery for doing the basic preparatory work in joinery and cabinet making – as did the Guild of Handicraft in Chipping Campden (1902-08) [Fig. 7], they remained sceptical about the validity of a machine aesthetic. A classic instance of this continuing aversion to "mechanical" appearances within the English Arts and Crafts community was the criticism levelled at an exhibition of woodcarving from the School of Industrial Arts, Geneva, held in Leeds in 1906 by the magazine *Arts and Crafts*. It noted that, "A serious technical defect in this work from the English point of view is its glass-like smoothness. The surface is carefully rasped so that no tool-marks are left visible."<sup>40</sup> The leading architect, C.F.A. Voysey in 1909 emphatically dismissed any prospect of "miles of machine-made moulding 'ever arousing' a moment's pleasant thought or feeling."<sup>41</sup> Some, like Ashbee, were eventually persuaded that a parallel role for the machine in the production of decorative objects was feasible, but neither the cultural climate nor the industrial situation in pre-war Britain permitted a creative response to the new challenge.<sup>42</sup>

It was not unreasonable for British artists and designers working in wood, even in the early twentieth century, to be dismissive of the threat of mechanisation to their trade. In the United States a greater reliance on woodwork combined with a progressive approach to commercial production led to the establishment even of Arts & Crafts furniture factories in the early 1900s.<sup>43</sup> However, in Britain the advance of technology on the creative side of the field was generally curtailed by economic factors, exactly as Jordan had predicted in 1847.<sup>44</sup> A substantial proportion of the better class of carved work in the furnishing business still required to be finished by the "final artistic touch of the handtool" – even for the most sophisticated of the American automatic carving machines. A correspondent in *The Illustrated Carpenter and Builder* (1901) confidently asserted that:

*"As long as machine-work does not invade the realm of the carver, the artistic value of machine-made woodwork is not deteriorated, and its cost is greatly reduced. There are really only two machines in general use which are at war with art, and those are the scroll-saw and the shaper, both of which have led to great abuses in design; but they are but little used in the finer sorts of work."*<sup>45</sup>

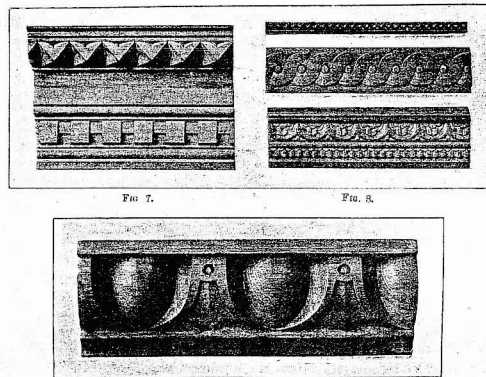


Fig. 8: Example of mouldings executed by Messrs. Allen Ransome & Company's Marbut Moulding Carver. From *Engineering* 71 (1901). This machine was designed by a joiner, Mr. H. Marbut, in the employment of the Company.

At the other end of the spectrum, in the building industry, however, the challenge of machinery to the skill of the craftsman was real and could no longer be denied. Machines like Ransome's Marbut Rapid Moulding Carver could, according to *The Illustrated Carpenter and Builder* of 1900, deliver work, "equal in point of finish and sharpness, and superior in regularity, to any that can be produced by hand," in a fraction of the time. [Fig. 8]<sup>46</sup> The consequences of this development for the master craftsmen, whose social status as much as their economic viability depended on demonstrably superior hand skill, were serious.

### A Craft Culture in Decline

The question of skill, its nature and place in industry and society, has been the subject of considerable debate amongst economic historians in recent times, especially related to the so-called "de-skilling" of British workers due to the rise of mechanised production in the course of the nineteenth century.<sup>47</sup> Much of the controversy centres on the relative importance of the two facets of the concept "skill". These can be interpreted "either as a necessary input to the efficient production of goods or as a social artefact which comes into being through the artificial delimitation of certain work as skilled."<sup>48</sup> As our views of nineteenth century workmanship in the field of architecture are largely coloured by those of the Gothic Revival and its rebellious offshoot, the Arts and Crafts Movement, it seems logical to start this exploration from their perspective.

"Many of the happiest ideas of the Architect," lamented *The Building News* in 1889, "lose their charm in the hands of the workman who has been trained in workshop traditions. The point of the design is missed in the translation." The journal puts much of the blame for this state of affairs on the conditions under which the craftsman was brought up to carry out his tasks in a mechanical way. "He may be a born artist" it claims, "but his environment, his handicapped position, and his restricted work makes it impossible for him to act as responsible agent." The editor concludes that:

*"workmen who are skilled as mechanical hands have taken the place of craftsmen*

*who could turn out superior masonry or joinery single-handed, who were wont to enter into the spirit of the architects' design. The mechanical woodworker has now his instruction direct from the contractor; a saving of a quarter of an inch in thickness, substitution of lathe and hand-saw for work that was at one time executed by hand, and the moulding machine for hand-wrought mouldings, are powerful inducements to alter and modify a design."*<sup>49</sup>

Like many in the profession at the time, the editor thought that a new type of contract based on piecework rather than day-work, similar to the French system, might discourage this kind of scamping. It would encourage the craftsman to become more personally involved with his work and with the design. Poor conditions in the workplace were, however, not the sole cause of inadequate workmanship according to members of this school. Another editorial in the same journal seven years later railed against the "paralysing effect of custom." Force of habit and reliance on rule-of-thumb methods, it claimed, had become a negative controlling force within the industry and made craftsmen completely unresponsive to stylistic experiment. It recalled how in the 1840s "old-fashioned" carpenters and joiners "brought up in the school of Nicholson", fought against the introduction of Gothic features and concomitant woodworking techniques and found that the same conservatism still prevailed amongst the majority of the contemporary workforce:

*"Apprenticeship, public opinion and the desire not to be eccentric, all contribute to make the average workman what he is. Inability to interpret drawings of architects is perhaps one of the causes which make him so unable to grasp any idea beyond his daily routine. He has little time to think or to give himself up to design, and we have noticed that the mechanical manipulator, the man who turns out the cleanest piece of work is often the least capable of breaking through the trammels of his craft."*

The various exhibitions of woodwork, such as those of students from technical schools held at Carpenters' Hall, in the eyes of the author, only served to confirm this typical characteristic of the artisan to "show his handicraft at the expense of his brains." He concluded:

*"The manual skill shown is of the highest quality, the joints are put together with minute accuracy, and the specimen is finished to a degree that is marvellous; but it shows little or nothing that is new in the design or any skill in application. Excessive labour and finish seem to be almost inimical to any intelligent grasp of the subject, as we find so often displayed in the work of men who have no idea but that common to their trade."*<sup>50</sup>

Followers of the Arts and Crafts Movement took a more sympathetic view of the joiners' predicament. At least, as we have seen with Sedding, they recognised that the architectural profession itself had been a major contributing factor to this state of affairs. But when it came to aesthetic matters their actions were frequently no less autocratic and contradictory. Architects like Philip Webb were famous for the rigour with which they controlled the detailed execution of their own designs for woodwork. And, despite the movement's professional partiality towards woodwork as a craft, a very small proportion of joiners (as opposed to carvers) actually progressed to the elite band of art workmen, because of a general lack of prowess in design. In their attempts to lift craft skill beyond the reach of the machine, the Gothic movement ended up reducing it to an essentially aesthetic concept. In doing so, master craftsmen like the joiners were placed in an impossible position. While the progressive employment of machinery was systematically rendering their traditional hand skills obsolete in the workplace, the joiners' very

best efforts were being denigrated by the art and architecture community for lack of taste and design flair compared with their medieval (and modern French) counterparts.

How did the craftsmen react to all this? As we have seen in Part I, the qualities which Nicholson identified in 1840 as being the particular strengths of the English joiner were, “neatness”, “soundness” and “accuracy”.<sup>51</sup> At that stage these were still considered as desirable attributes, very difficult to achieve with contemporary tools and materials, and entirely appropriate to the kind of work the joiners were expected to execute in the classical style. He also credited them with a thorough theoretical understanding of their subject. We have no cause to doubt Nicholson’s judgement on these matters.

As the recipients of a proud tradition of woodwork stretching back to the Middle Ages, at least two centuries of grounding in the grammar of a specific stylistic language through a series of pattern books, and text books like those by Nicholson himself, contemporary master joiners had every reason to be proud of the level of skill attained. An elaborate set of hand tools had been developed in response to every need of the slowly evolving classical vocabulary. The joiners’ status, as master craftsmen, rested on the extent of their command of these tools to shape the various architectural components, and their ability to construct complex compound units like sash-windows and staircases. Designing new decorative features and ensembles for buildings was not a skill the professed to have, nor was it called for by the third decade of the nineteenth century, with both the classical tradition and the independent designer, the architect, apparently securely established. As Nicholson pointed out: “*The end and aim of the joiner in all operations is to avoid the peculiar imperfections and disadvantages of his materials and to do this at the least expense of time and wood.*”<sup>52</sup> He therefore did not consider the lack of artistic ability a defect on the part of the English joiner; rather the French joiner’s excessive attention to external appearance in his work at the expense of the constructional basics was considered a fatal weakness.

Like other master craftsmen of the era within the building industry, the skilled woodworkers had another characteristic which Nicholson did not mention, but which was to influence their response to future events, namely a strong sense of propriety. They “knew their place” within the industry’s hierarchical structure and were on the whole satisfied to operate within its traditional delimitations, even if it sometimes meant being exploited by those higher up the social order. This was illustrated, for example, by an account of a certain Charles Newnham of his bad treatment, while a young journeyman carpenter in the employment of Sir Robert Smirke, the architect, in 1819.<sup>53</sup>

With this combination of skills and attitudes, the product of an age-old crafts tradition of which they were amongst the last remaining genuine exponents, the joiners entered the industrial arena. They were soon faced by stark choices which challenged all they believed in and stood for. The subsequent history of their progress reveals much about the essential nature of the craft as well as changing attitudes towards skill under progressive industrialisation in the course of the nineteenth century.

In view of the usual paucity of such information for building craftsmen we are fortunate to have in this case the reports of delegates from the trades to the various international exhibitions in Paris in 1867, 1878 and 1889. They give a useful reference point to the debates in the contemporary professional press about the relative levels of skill possessed by English and French joiners.<sup>54</sup> What strikes one immediately about these reports is the remarkable correspondence between the opinions of the artisans reporting both the 1867 and 1889 exhibitions and those expressed by Nicholson decades earlier. It was not just a question of thoughtless chauvinism. These workmen, all highly respected representatives of their trades, not only inspected the woodwork on display in the exhibitions, but also visited Parisian workshops and buildings noted for good quality contemporary joinery. T.W. Hughes and John D. Prior, who

wrote a joint report on carpentry and joinery in 1867 concluded as follows:-

*“On the whole we consider Parisian joiners’ work to be far inferior to that done in this country. Their mouldings, as a general rule, are very well designed, and their carving is remarkably well executed. We can easily understand how an art-student may be attracted by the tasteful and artistic appearance of a piece of joiner’s work, and may fancy that he sees in it an evidence of the superiority of French work; but the practical workman will arrive at a very different conclusion. He will at once understand that for the portions of the work which are so attractive to the eye the joiner is in no way responsible, since he is neither the designer nor the carver; whilst the framing itself would be found to be very defective, both in strength and finish. French workmen will require better tools, and an entire revolution in their system of working to enable them to execute a class of work fit for the English market.”*<sup>55</sup>

The joiner, Alexander Kay, in his report of the same year was also highly critical of the quality of workmanship in French joinery which he rated as inferior to comparable English work. His opinion on quality at the new “Imperial Library” at the Hotel de Ville was:

*“they were the best joinery I had seen in Paris, but were not equal to the joinery in London Government Buildings, such as the Houses of Parliament, British Museum, and the new Indian and Foreign Offices in the course of erection, neither for solidity of workmanship nor beauty of finish.”*<sup>56</sup>

The 1889 reports confirm these views, noting that carpenters were more highly respected in France than their joiners. They (the reporters) also found the latter to be slower and less sound workmen than their English counterparts. As France had been the benchmark for quality in design and workmanship to British artists, architects and “art manufacturers” ever since the Great Exhibition of 1851 the above views were not to go unchallenged. *The Building News* in particular was highly critical of the native artisans’ ability to judge the qualities of work executed abroad because of “natural and national prejudices”, and difference in circumstance and production methods.<sup>57</sup> In the ensuing debate the making of a door became a test case for comparing English and Continental standards of joinery, illustrating the gulf that existed between the two groups.

The controversy seems to have started with a lecture given in 1889 at Carpenters’ Hall by the superintending architect to the Metropolitan Board, Thomas Blashill, in which he compared English doors conservative in design as well as wanting in execution. “*It will be observed,*” he said, “*that the ordinary English door is an object upon which the smallest amount of art of skill has been employed. Every part of it is prepared by machinery, and it only requires to be put together. A young apprentice rapidly acquires the art of doing this, and an experienced joiner can hardly improve upon it.*” He especially admired French doors of the “superior class”, which he found “*more spacious and lofty, and more richly ornamental than anything that would, under similar conditions, be executed here.*” He was critical of the French tendency towards excessive ornamentation, but thought that the local craftsmen erred too much in the other direction: “*Many times I heard from workmen the notion that taste is something beyond their province, and impossible to be acquired – a very mischievous notion. In all ages, when good art flourished such as everybody now admires, the good work must have been not only executed but, to a large extent, designed by the workmen.*” He concluded by urging the English joiners to study this problem, taking account of lessons to be learnt from Continental practice.<sup>58</sup>

The Paris Exhibition in the same year gave an opportunity to craftsmen to inspect Continental examples of this class of joinery, but the joiner, T. Vest, who reported on the subject was not



impressed. He found the French examples too ornamental for his taste and inferior in construction and finish.<sup>59</sup> A stalemate had clearly been reached but, as a “Teacher of Building Construction” pointed out in a letter to *The Building News* in November 1889, it was by no means all the craftsman’s responsibility:

*“The question of design of our joinery is seldom indeed left to the workman – not that, as things are at present, it would be much improved if it was; but it is rather hard to blame him for all the ugliness when we know that it rests almost entirely with the architects.”*<sup>60</sup>

The Artisans Reports offer another example of how the perspectives of workmen and architects of the period differed on these matters. The example concerns the use of machinery. We have seen how this issue had come to dominate architectural thinking with respect to concepts such as skill and craftsmanship. None of these reports show any of the moral objections to the machine so common in art and architectural writing. On the contrary, both the 1867 and 1889 reports seem to revel in the advantages given to the British joiner over his French counterpart by the superior technology (hand tools as well as machinery) at his disposal. Almost no distinction is made in their accounts between work done by hand or machine.<sup>61</sup> For instance, this is how Kay describes the exhibit of a leading English joinery manufacturer in 1867:

*“Messrs. Clerihew and Lascelles of Bunhill Row, Finsbury, exhibits various articles of joinery in the testing-house; sashes and sash frames, doors and finishings, staircase and mouldings, all worked by machinery, being only put together and cleaned by hand. The mouldings are without glass-paper or scraper; and from the character and quality of the work, and the prices at which they produce such articles, must convince any French joiner that he is far behind the British joiner, as it convinces me.”*<sup>62</sup>

These artisanal delegates readily admitted to Continental workmen, in particular the French, possessing “a keener appreciation of artistic effect.” They attributed this to a lack of education on the part of the British workmen and argued for a combined technical and artistic education although, as can be seen from the following statement in the 1889 report by Vest, their sense of priorities lay with the former:

*“France is present in front of design, but behind in construction; we are far in advance in construction, but not in design. But I contend that we are the best off, for Art is only a secondary consideration, seeing that it must give us hope to combine our construction with design.”*<sup>63</sup>

By that stage a division, similar to that which occurred in architecture (see above) had emerged within the ranks of the joiners – between those with artistic tendencies, the “artists”, and the “operatives” whose leaning was towards the technical/practical side of the craft. The “artists” enjoyed the patronage of a mixed group of people linked by their anti-industrial sympathies: supporters of the various craft-oriented architectural movements and the guilds – the old city companies like the Carpenters’ and Joiners’ Companies of London, as well as newly formed craft guilds. The “operatives” in turn relied on support from the business community and industry, including the various trades’ societies.

Chief within the former group were the “Gothic men” who contracted for church work and resided in the principal towns. In this small band of craftsmen of cultivated taste and superior

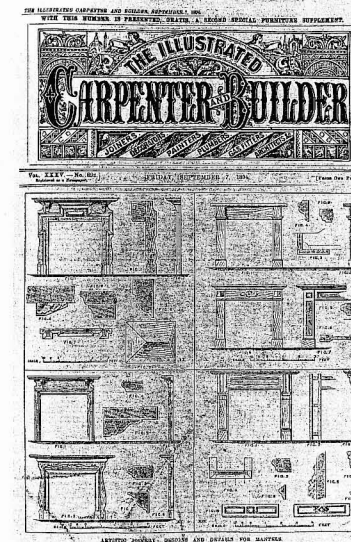


Fig. 9: The front cover of the *Illustrated Carpenter and Builder*

skill, for whom, as *The Building News* put it in 1889, the merest “suggestion of the architect’s pencil” was enough,<sup>64</sup> the ideals of the early reformers of the Gothic Movement had been realised. “Ecclesiastical Sculptors” like Messrs. Harry Hems & Sons of Exeter, whose work George Ellis illustrated in his *Modern Practical Joinery* (1908),<sup>65</sup> were capable of producing joinery of the highest order that would stand comparison with the ancient models they tried to emulate.

Most joiners, even very skilled ones, however were more comfortable working in the classical idiom with its regular ornamental system for which a standard, though expensive collection of moulding planes were available. A complete set of joiners’ hand tools could cost as much as £100.00 in 1892.<sup>66</sup> Attempts, such as that by *The Illustrated Carpenter and Builder* in the mid 1890s, to encourage craftsmen like these to produce designs for “artistic joinery” in their own right resulted in a curious mixed style of little originality. It satisfied no one and only served to fuel the

Arts and Crafts Movement’s campaign for a rejection of all mouldings as a legitimate form of decoration. [Fig. 9] Implicit in this “cult of simplicity”, as Beresford Pite called the development in 1900,<sup>67</sup> was the denial of any manner of copying as an approach to design. In craft terms this meant suppressing the use of one of the joiners’ most treasured pieces of equipment, the moulding plane.

In a lecture on the influence of tools on design at the Carpenters’ Hall in 1909, A. Romney Green traced the origin of the corrupting influence of machinery on joinery back to the introduction of the moulding plane during the Renaissance period. This, according to him, led to a split between the carver and joiner, caused the latter to indulge in excessive ornamentation and stripped him of his individuality to a point where he actually came “to prefer artifice to art” and became “an artificer not an artist”. From this position, Green argued, it was but a small step to the introduction of labour saving machinery and the “mechanisation” of the men themselves: with the “mechanical ideal drilled into him so thoroughly that, even if an architect insists on having hand-made doors or hand-cut mouldings, the result is generally almost the same as if machinery had been freely used.”<sup>68</sup>

With the prospect before them of having to relinquish the finest tools of their trade and face an uncertain future with what many considered primitive equipment, it is small wonder that relatively few joiners became actively involved in the reform movement. For, while they might have been beguiled by the vision of a new craft-based culture proclaimed so eloquently by Ruskin, Morris and their followers, the sacrifices they were called upon to make in its cause were unrealistically high. Their letters in the professional journals, however, bear testimony to the fact that the workmen were themselves concerned about the way the industry was developing. They sometimes made fun of the “primitive and exclusive” ways and methods of the old-style master craftsmen, as in the sketch of a “Staircase-hand of the Old School”, published in *The Builder* in 1878.<sup>69</sup> However, most joiners recognised that the marvellous degree of hand-eye co-ordination



these men possessed was a precious inheritance and worth preserving for itself and for what it represented. They were certainly under no illusion about the fact that the traditions upon which these skills rested were being eroded by the introduction of machinery. It was a question of weighing the options and, being essentially practical men guided by common sense, they accepted that, ultimately, the future of the trade must lie with machine technology. They simply had no choice.

It is easy from our vantage point, clouded by the anti-machine rhetoric of the nineteenth century reformers, to miss the point that mechanisation brought significant material benefits to the trade, not the least of which was that it made the joiners' work physically easier. This topic engendered strong feelings amongst the craftsmen, especially union members. As late as 1907 there were still joiners who talked of the "muscular slavery" of the manual process which "*pulled growing lads to pieces, the shoulders often being lop-sided, the straining of the internal organs and the heart especially suffering.*"<sup>70</sup>

In keeping with other skilled workers, the joiners had also experienced a considerable rise in living standards in the course of the nineteenth century due to the increase in industrial wealth. Up to the 1880s, they were not only able to maintain, but also to improve their relative position on the earnings scale within industry as a whole. It has been calculated that while, between 1850 and 1886 British skilled workers on average added about 30% to their hourly rate of pay, the building workers increased their rates by between 42% and 50%.<sup>71</sup> Joiners were amongst the highest paid in this category. Thereafter, however, their situation stagnated and by 1906, along with other master craftsmen, the joiners had lost their place amongst the "labour aristocrats".<sup>72</sup>

Although there were good economic reasons for this loss of earning power the joiners' falling reputation as skilled men must have been a contributing factor; it is over this period that the trade came in for much serious criticism about the quality of the work they produced. Not everyone within the trade considered the machine as the sole instrument of destruction of the hand skills and codes of conduct upon which their culture was based. The Chairman of the Incorporated Company of Free Joiners, Newcastle upon Tyne, spoke for those at a meeting held at the local Antiquarian Society in 1907:

*"...trades unions (who might be said to occupy now the place the old trade guilds formerly did) instead of exercising their power and authority in producing excellent craftsmen, appeared to have brought about a state of things which had practically abolished apprenticeship and produced a set of men who were machines, and who had no real handicraft at their finger ends. Indeed, it might be firstly said, that the old trade guilds, with their stringent rules and regulations, had the effect of inculcating a spirit of emulation, making 'the best' their standard, and thus levelling up' and making every man as excellent a workman as possible, whereas the trades' unions of the present day had the very opposite effect, namely, that of levelling down and putting the best workman on a level with the worst, the effect being that no real interest seemed to be taken by the craftsman in his work."*<sup>73</sup>

The ability to rebuild the skill-base of the joiners, however, no longer lay within the power of any single group within the trade, but required the concerted effort of all. This simple fact had already been recognised a generation earlier. Again foreign influence seems to have been the catalyst, for it was the Paris Exhibition of 1867 that gave rise to the general demand for technical education in Britain. The reports of the commissioners and tradesmen delegates all confirmed the comparatively poor levels of education amongst the trades in this country. The movement slowly gained momentum during the 1870s, partly because of the growing realisation of the deficiencies of the existing national system of art and design education in providing for the trades (see above).

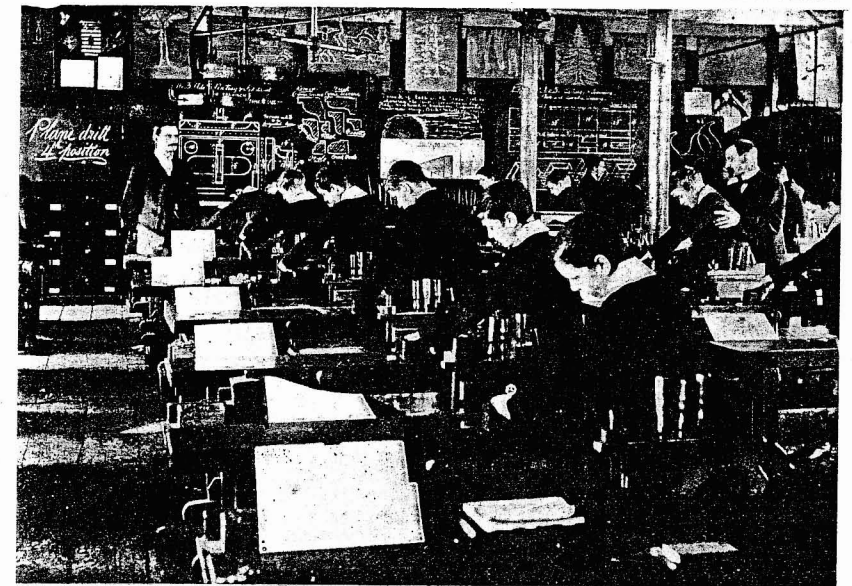


Fig.10: A manual training class at "tool drill" with jack planes at a school in the Manchester area, 1902. From *The Woodworker*, December 1902.

During the 1880s the Carpenters' and Joiners' Companies joined the campaign, with the former becoming particularly active sponsoring a series of annual public lectures, an open examination for the trades and a technical institute. The Technical Instruction Act of 1889 gave a new impetus to the movement because it was the first official recognition of the need to teach technology as distinct from science. This provided for the development of a national system of technical and manual instruction under local authorities. However, as Britain was by then in the thrall of what economic historians call the "Second Industrial Revolution (1890 – 1914)", not much progress was made.<sup>74</sup> The various parties involved found it impossible to agree on the format of the new educational system and whether to put emphasis on the workshop or the classroom as the basis for instruction. To prospective students both options must have seemed equally unattractive: either to spend time minding machines in a workshop under conditions which made it impossible to gain all-round skills or in a classroom acquiring theoretical, but little practical skill. There a course in "tool drill" exercises was regarded as "an inspiring item [in] the dull monotony of ordinary school routine." [Fig. 10]<sup>75</sup>

N.B. Dearle has identified no less than four different classes of apprenticeship in use during the early years of the twentieth century,<sup>76</sup> all of them present in woodworking. It was a chaotic situation, with some like Arthur J. Penty still convinced that the craft guild system founded on apprenticeship would yet prove to be the salvation of British industry.<sup>77</sup> Those from the opposing camp knew otherwise, but appreciated that modern industry required an educational system as comprehensive and rich as the old apprenticeship tradition. Few were optimistic that the solution was in sight. "*It may safely be predicted,*" wrote the editor of the newly established *The Machine Woodworker* in 1912, "*that it will take another generation or so to weave into this country a continuously educative system from the elementary school to the journeyman or skilled artisan stage.*"<sup>78</sup>

As for skill, it was argued by the progressives in the trade immediately after the war that the coming of machinery had not only brought extra scope for employment to carpenters and joiners, but also fostered higher levels of skill. Harry Bryant Newbold, author of *The Modern Carpenter*

and Joiner (1926) explains why this was thought to be so:

*“For the carpenter and joiner is degraded into a machine-minder; he remains a craftsman who must not only be thoroughly competent to use his hand tools at the bench, but also understand the nature of machine work and the new duties it had introduced in every phase of his business.”*<sup>79</sup>

It seems that the new men of the industrial era had become so far removed in experience and thought from their pre-industrial forebears that they no longer even understood what the qualities were that they had lost through the introduction of machinery. As John Burnett has recently pointed out with respect to the controversy on mechanisation and deskilling, if “skill”, “judgement”, “discretion” and “responsibility” are present, “the precise nature of the task, the degree of mechanisation, the size of the organisation and the nature of its ownership would seem to be largely irrelevant.”<sup>80</sup>

There is a good chance that these conditions prevailed for the craftsman in the picture of a carpenters/joiners workshop of 1804 [Fig. 11]. Can the same be said for the men in the picture of a modern joiners’ workshop shown by Newbold in 1926? [Fig. 12]



Fig.11: The interior of early 19th century carpenter's/joiner's workshop. From *The Book of Trades*, (1804).



Fig.12: The interior of a “modern” builder's, carpenter's and joiner's workshop. From H.B. Newbold, *The Modern Carpenter and Joiner*, (1926).

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