Work and Authority in an Iron Town:  
Merthyr Tydfil, 1760 - c.1815

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Abstract

This thesis focuses on work relations within the ironworks established at Merthyr Tydfil, Glamorgan, in the second half of the eighteenth century. From the 1780s, these concerns expanded at high speed, to rank amongst the largest industrial plants in Britain.

A variety of manuscript sources are exploited to provide an unusually detailed account of eighteenth-century workplace practice. Particular attention is paid to the problems of capitalist control that arose in enterprises which were of unparalleled size, and growing at breakneck pace. The ways in which the slippage of capitalist control was offset are examined. Firstly, the 'culture' of work in the iron trade, the set of protocols which governed the organisation of work by senior workmen, is anatomised. Secondly, an analysis of the peculiar forms of working practice in the collieries and mines of Merthyr is developed to provide an explanation of the fierce loyalties which the rival ironworks could command.

The second part of the thesis examines the power of the Merthyr ironmasters, both in south-east Wales, and, more especially, in the corporate politics of the national iron
trade. The evolution of a piece of legislation which was sponsored by the ironmasters of South Wales is traced in an effort to understand the extent and nature of their power.

Lastly, an account is given of Merthyr's development as an urban settlement, attending closely to the difficulties which industrialisation presented for the district's radical tradition. Stress is laid on the demoralising defeat of Merthyr's radicals in the late 1790s, and the ascension to local power of the ironmasters.
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<tr>
<td>BBCS</td>
<td>Bulletin of the Board of Celtic Studies</td>
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<td>BL</td>
<td>British Library</td>
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<td>BPP</td>
<td>British Parliamentary Papers</td>
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<td>BRL</td>
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<td>CCL</td>
<td>Cardiff Central Library</td>
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<td>DWB</td>
<td>Dictionary of Welsh Biography</td>
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<td></td>
<td>(Glamorgan County Council/Guest Keen Iron &amp; Steel Company, 1960)</td>
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<tr>
<td>EcHR</td>
<td>Economic History Review</td>
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<tr>
<td>GloRO</td>
<td>Gloucestershire County Record Office</td>
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<td>House of Lords Record Office</td>
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<td>Jenkins</td>
<td>P. Jenkins, The Making of a Ruling Class: The Glamorgan Gentry, 1640-1790</td>
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Lloyd  J. Lloyd, The Early History of the Old South Wales Iron Works, 1760-1840 (1906)

MPL  Merthyr Public Library

NLW  National Library of Wales

PRO  Public Record Office

SRO  Shropshire County Record Office

WHR  Welsh History Review

Wilkins  Charles Wilkins, The History of Merthyr Tydfil (2nd edn., Merthyr, 1908)

The place of publication of printed works is London unless otherwise specified.

Certainly, historical writing about Merthyr has never suffered from anopic antiquarianism; it has always been characterised by a lively engagement with the problems of class and nationalism as these affected the Welsh working class which emerged from the country's nineteen-century industrialisation. As that class endured the interwar 'locust years', the starkness of its predicament encouraged a re-examination of its historical experience in a fierce and polemical literature. In this, the incursions of English iron and coal capitalists, cruelly exploitative and oblivious to their defilement of the land and its people, was denounced in blistering rhetoric. The Welsh
Chapter One

Introductory (1): Merthyr Tydfil in History

The history of the iron town of Merthyr Tydfil has always been written in superlatives. Those who saw the place in its nineteenth century heyday never hesitated to use immoderate terms when recording their reactions, whether of awe or repugnance. And historical writing has followed suit. Merthyr has not lent itself to the placid, imperturbably 'detached' scholarship so cherished by the mainstream tradition of British historiography. Its existence has been too short, and its experience too extreme, swinging wildly from boom to agonising depression and decline.

Certainly, historical writing about Merthyr has never suffered from myopic antiquarianism: it has always been characterised by a wider engagement with the problems of class and nationhood as these affected the Welsh working class which emerged from the country's nineteenth-century industrialisation. As that class endured the interwar 'locust years', the starkness of its predicament encouraged a re-expression of its historical experience in a fierce and polemical literature. In this, the incursion of English iron and coal capitalists, cruelly exploitative and oblivious to their defilement of the land and its people, was denounced in blistering rhetoric. The Welsh
people had been deprived of their birthright, and the locus classicus of the process of alienation was Merthyr. Through a variety of media — the best-selling fiction of Alexander Cordell might be mentioned² — these sentiments solidified as a mass feeling.

It is difficult to exaggerate the totemic value that has accrued to Merthyr. It has a hallowed place in the somewhat lachrymose tradition which details the sufferings of the Welsh people as they underwent proletarianisation. It has also been central to an alternative emphasis on the efforts of Welsh working people to forge a self-identity in opposition to the dominant values of a capitalist civilisation. If Merthyr was the site of deprivation, it was simultaneously the site of resistance. The town has been celebrated as the birthplace of a Welsh working class, and, correlatively, of a radical proletarian politics. The key point in this nativity came in 1831, when, in the midst of the Reform crisis, the toilers of Merthyr rose in an extraordinary armed insurrection.³

Developments in a local working-class tradition thereafter cannot compare with the 1831 Rising and its passions, but time and again Merthyr acted as a vanguard for the rest of Wales.⁴ In 1868, the parliamentary borough fell to nonconformist radicalism in the person of Henry Richard,
the 'Apostle of Peace', who ousted H.A. Bruce, Gladstone's Home Secretary, in the process. Later, and still more breathtaking, was the triumph of James Keir Hardie who took the second of the borough's two seats for the I.L.P. at the 1900 general election, and, in so doing, heralded the end of Lib-Labism in South Wales.

The sense of dealing with a 'working class tradition' of considerable cultural resonance has been crucial for the generation of historians which has, since the 1960s, been responsible for a 'renaissance' in the study of Welsh history. The vitality has been most notable in the field of labour history, where the foundation of the Welsh Labour History Society with its journal Llafur, and the establishment of the South Wales Miners Library - both in the early 1970s - were landmark events in the formation of a 'new' Welsh history. For the scholarly activists who were associated with these developments, the consciousness of a tradition (in which Merthyr held pride of place) was more than an inspiration, it also provided the raw material for their researches.

Much recent work has been devoted to a better understanding of the role which popular memory and tradition have played in Welsh working-class life. But the new approaches have been as critical as they have been
celebratory, showing an attention to the lapses, limitations and contradictions of received tradition. The effect of this tighter scrutiny at Merthyr has been to emphasise that the town's radical pedigree, for all its ring of militancy, cannot be conceived of as a unified, unproblematical progression.

An adequate account of the declension of the insurgency of the 1830s into the temperate reformism of the 1860s is still awaited. Such a departure was hardly unique in the middle decades of the nineteenth century, but at Merthyr the reorientation was singularly sharp. In 1831, European Revolution had a palpable presence: at the time of the Rising, it was recalled, "[t]he words 'Remember Paris' and 'Think of the Poles' were on the mouths of many of the so-called ignorant men of the mountains". But by 1868, international horizons had narrowed: Henry Richard's famous victory coincided with the show trial of Merthyr's Fenians, and a popular outburst of anti-Irish chauvinism. Nor is the remembrance of Keir Hardie's success, dependent as it was upon Liberal patronage, the occasion for unequivocal enthusiasm. Insofar as it can be represented as a precursor of the decayed Labourism that dominates South Wales in the last years of the twentieth century, its mythic status is increasingly subject to query.
Nevertheless, Merthyr retains a potency for the left in Wales. And for a left-leaning nationalism (which is by no means the same thing), its symbolic and emotional consequence has burgeoned in recent years. The cult of Dic Penderyn, the young ironstone miner who met 'martyrdom' on the gallows for his part in the 1831 Rising, is testimony to this. There can be no doubt that much of this continuing fascination - not to say reverence - for Merthyr Tydfil can be attributed to the work of Gwyn A. Williams. In a series of overlapping texts, from his seminal 1961 article 'The Making of Radical Merthyr, 1800-1836' to his recent summation in the The Merthyr Rising, Professor Williams has charted the political culture of the town in the years of its industrial ascendancy. More than that, he has positioned Merthyr centre stage in far wider transformation, the entry of the Welsh people 'into history'.

This process, stretching from the American Revolution to the 1830s, derived its energy from two sources. One was the jolt of capitalist development that shook Wales in the late eighteenth century; the other was the initiative of a loosely-coordinated 'middling' intelligentsia, democratic in temper, heterodox in religion, and rooted in a popular literary culture, whose members proved both willing and able to manufacture a nationhood for their compatriots.
To condense a complex and wide-ranging argument: the interplay of these agencies produced a consciousness that was simultaneously radical, proletarian and Welsh. It was also transient, restricted to a particular conjuncture in the 1830s. Indeed, its fragility is taken for granted. The Merthyr 'tradition' is one that has been repeatedly fractured and assembled anew. Here, tradition must necessarily be understood as a process, and a process of astonishing plasticity at that.\textsuperscript{14}

This reading of modern Welsh history, in which Merthyr holds a pivotal position, has proved hugely influential among the nationalist left and beyond. So too has the political agenda carried within it - in Gramscian terms, the urgent requirement in Wales to "awaken and develop a national-popular collective will". Much of Williams' work has, after all, been devoted to illuminating earlier, eighteenth-century attempts to fulfil similar projects.\textsuperscript{15} Naturally, so wilfully controversial an interpretation has been strongly disputed. Most commonly, it is asserted that Williams' depiction of Welsh radicalism is wildly overdrawn; that its adherents never exercised the influence he ascribes to them; that to concentrate on the propaganda of a heretical minority is to underestimate the all-embracing impact of Calvinist orthodoxy. It may even be that the identification of Merthyr as the historic home
of Welsh radicalism is misplaced. Kenneth O. Morgan, for one, has raised a gentle note of dissent:

"Maybe we have all got it a shade wrong, and have been seduced by Merthyr, 'matrix and crucible', cradle of radicals and Welsh historians? Maybe we ought to have been looking more closely at the Frost-Bevan-Kinnock territory further east all the time?"

Clearly, this is an area beset with controversies of the sort that should be addressed by any researcher in the field, and so they will, albeit tangentially. Some comment on the fortunes of Merthyr's democrats during the French Wars, for example, will be ventured in the final chapter. However, any intervention in the debates on the place of Merthyr in Welsh historiography will be oblique: there is nothing that amounts to an open dialogue with the corpus of work headed by the writings of Gwyn A. Williams. Nevertheless, it has served as a constant point of reference, and should be viewed as such throughout.

* * *

The analysis presented here will, however, eschew the 'Welsh' frame of reference which usually informs argument about Merthyr. This preference does not denote a deeply-held dissatisfaction with the 'Welsh' perspective per se; rather, it is actuated by the belief that there is much to
be learnt about the town, its society and politics, by conceiving of Merthyr as an integral part of the late eighteenth-century iron industry. Hence the primary concern of this thesis is to be with Merthyr as an industrial settlement, rather than as the site of a political tradition. It will investigate the forms of work which were performed in the Merthyr iron industry, the ways in which work was organised, and the consequences this had for the emergent urban community at Merthyr. In doing so, it will take its cue from some recent preoccupations in labour and social history. These will be examined presently. But first it may be helpful to survey the state of labour history as a discipline, since the field gives every sign of being in a state of conceptual flux.

Perhaps the key factor shaping current discussions within labour history is the malaise which now afflicts the left and its historians. This is not to say that labour history or its practitioners must necessarily be identified with the left: but it is to recognise that, for better or worse, many of the governing conceptions of labour history have been borrowed from the political left.

That being the case, the global shift towards a resurgent right-wing, observable from the mid-1970s onwards, has
been of some consequence. It has been a complex shift, and it would be presumptuous to attempt an exhaustive appraisal of the phenomenon. There is, however, some relevance in picking out one of the most important conditions of the rightward shift, for it was subversive of many of the notions to which the British left had habitual recourse. This was the long-term decline of the state as an agency for regulating the course of national development. Its efficacy in doing so, always imperfect, was visibly collapsing in the late 1970s. For the 'New Right' the state's loss of potency could be cheerfully rationalised as an indication of what they had always maintained - the undesirability of state intervention per se. But for the left, which by and large worshipped the state as the engine of change, the consequences were devastating: a succession of nostrums were fatally compromised.17

This development is worth isolating, for it has been central to the formation of the defensive and shamefaced ideological climate that has shrouded the left in the 1980s. The dominant theme, as the credibility of old 'truths' evaporated, was self-doubt. Sceptical intelligence was certainly called for, but the reappraisals of the 1980s soon took on an obsessive tone, where nothing less than the wholesale abjuration of former
verities was required. Disenchantment with a conceptual arsenal that seemed increasingly anachronistic had its obverse in the tremendous vogue for theoretical and political traditions that had always looked askance at the shibboleths of the labour movement. These now enjoyed a considerable access of strength among left intellectuals, and so, naturally, in left historiography, where many were seeking to move beyond the syntheses, developed between the 1940s and 1970s, of the 'British Marxist Historians', erstwhile comrades in the Communist Party Historians' Group.18

On a theoretical plane of some rarefication were those whose intellectual ancestry led back to the 'structuralist' Marxism, propounded by Louis Althusser in the 1960s. The confrontation between that then modish school and a home-grown Marxist historical practice was first announced in E.P. Thompson's anathema The Poverty of Theory.19 A bitter exchange with the partisans of structuralism ensued. Yet from the vantage point of the late 1980s, Thompson's polemical onslaught, composed in the mid-1970s, has an antique air about it. Insofar as the dispute concerned the proprietary rights to 'Marxism', it has long since ended with the high theorists of Althusserianism concluding that Marxism was not an object worth possessing in the first place. This was part of the
now well-chronicled dissolution of structuralist Marxism, with its project of reformulating historical materialism, into the unfettered idealism of post-structuralism. Marxism experienced a precipitate demotion. Henceforth it had no more claim to attention than any other discourse of nineteenth-century provenance. Indeed, to the extent that it was still consulted in connection with historical causation, it was either derided for its naivety or reviled for its 'totalizing' arrogance.

Explicit recognition of the reversal in priorities that was implied by the overturn of materialism has not been widespread in labour history. The most outstanding reconsideration has been that of Gareth Stedman Jones in his treatment of Chartism. Stedman Jones has rejected interpretations of Chartism whereby the movement is analysed, according to "a priori social inferences", as an expression of the "putative consciousness of a particular class". Instead, Chartism should be studied in its linguistic aspect - as a political programme - independent of social conditions. Chartism has to be understood as a discursive formation which actively shaped the ideological character of its adherents, rather than a passive entity which absorbed its political coloration from the social background of its recruits.
While there have been few pieces of 'rethinking' as thorough as that undertaken by Stedman Jones, his intervention is symptomatic of a definite trend. A recent essay by Jonathon Zeitlin, echoing Stedman Jones's distrust of 'a priori social inferences' in the writing of labour history, amounts to a virtual post-Marxist manifesto. Moreover, at a less elevated theoretical pitch, many of the assumptions at work have flowed easily into the wider ideological currents of the 1980s. In particular, they disrupted the once common inclination among left historians towards labour history, towards a labouring class, its conditions and culture, as an object of study.

For those in the zero-gravity world of post-structuralism, there could be no validity in privileging the proletariat and its exploitation over, say, children and their subordination to adults. This was pluralism with a vengeance, where society was constituted by a multiplicity of antagonisms, oppressions and acts of resistance, all of which were to be conceived of as co-equal. To impose a conceptual hierarchy on this endless diversity was not merely erroneous, it was tantamount to intellectual totalitarianism. Indeed, it was to succumb to the most egregious feature of Marxism: its alleged propensity to 'reduce' phenomena to the workings of an ulterior economic
structure, or, failing that, to some primal struggle of classes.

For many on the left, the traditional emphasis on the proletariat, as either the agency or beneficiary of political change, lost all logic. The disappearance of the working class was loudly proclaimed, not for the first time of course, but the sharp decline in manufacturing jobs in the early 1980s seemed to provide powerful empirical confirmation of the tendency. With the eclipse of 'labour', it was control over knowledge which was to be the defining characteristic of a post-industrial society. For several historians, the decline of industrial society called into question its necessity as a phase of social development in the first place. As mass production lost its aura of inevitability as the form of industrial organisation, researchers were free to ponder on whether it had ever possessed an irrefutable rationale. Was it not equally plausible to suggest that the course of industrial development had been shaped by power relations governing the deployment of technology that existed independently of and prior to economic relations?

The foregoing considerations, deeply corrosive of old orthodoxies, were enormously strengthened by their confluence with what has without question been the most
influential current for the left intelligentsia in the
1980s: feminism. Despite its atrophy as an activist
movement, feminism's academic weight has by any
measurement grown prodigiously in the last fifteen years.
A full appreciation of its impact lies beyond the scope of
these introductory notes. Indeed, there is some
difficulty in presenting a definitive feminism, for its
signal feature is diversity - of inspiration, theory, and
practice. Yet this eclecticism has had its advantages:
for one, it has allowed feminism to absorb elements of
other critical schools, informing them in turn with
feminist perspectives. So, for instance, the advocates of
a post-industrial reconstruction were reinforced by
feminists, who welcomed the prospect of decentralised,
small-scale loci of power and 'alternative' forms of
production as a counterweight to hierarchies and
technological formations, which they saw as intrinsically
masculine in bias.

Interpenetration of this sort has now proceeded so far
that disentangling discrete ideological currents is
extremely difficult. Nevertheless, it is clear that those
critiques that can be assembled under the rubric of
'feminism' have presented a formidable challenge to
established ways of approaching labour history. Attempts
to install patriarchy as the paramount category of
analysis have been, needless to say, profoundly disruptive of settled, comfortable patterns of inquiry. But even in the absence of a root-and-branch reorientation of that explicitness, women have had no reason to revere a labour polity that has consistently assigned them to a subaltern position. In consequence, the interventions of feminist historians have been as much an indictment of the corpus of labour history as a contribution to it, raising awkward questions about the sexual division of labour, and about the exclusion of women from certain trades and trades unions.25

Paradoxically, for a critical tradition that has often laid an ultra-Thompsonian stress on 'experience', feminist writing on the Industrial Revolution has been able to find common ground with economic historiography of an austerely quantitative bent. Research programmes that have downgraded the scale of economic growth in the late eighteenth and early nineteenth centuries, and emphasised the freakish singularity of leading sectors, like textiles and metallurgy, have been gratefully endorsed.26 For they sap at the most powerful of received images of the Industrial Revolution - its 'heroic' representation, centred on the growth of large-scale industry. More muted indices of change have permitted a shift in focus, away from epochal technological change and a pantheon of male
entrepreneurs, and towards a new appreciation of the depth and diversity of low-key, dispersed manufacturing that depended upon the labour of women and children.\(^{27}\)

* * *

This sketch of some of the prevalent political and historiographical tendencies of the last decade has been undertaken because the tenor of this thesis is at odds with many of them. The very subject matter is out of step with current fashion, for Merthyr was nothing if not Promethean, formed as it was by heavy industry. More generally, the approach offered here will not be an endorsement of the distaste for Marxism that is now rampant on the radical left. Fittingly, its point of departure is the act of production itself, the analysis of which has an honoured place within the Marxist project. In the analysis which follows, a detailed exploration of the performance of labour in the Merthyr iron industry will be joined to a consideration of the consequences which the forms of work had for social relations in the town. In inspiration, if not application, this follows a considerable body of research, directly in the Marxist tradition, that has been centrally concerned with the labour process.
The renascent interest in work as an object of study is attributable in no small degree to Harry Braverman's Labor and Monopoly Capital, a landmark publication which provoked debate on an international scale, embracing economics, history and sociology. A discussion on work and its ramifications has also flourished within the narrower field of British labour history. Here, the major contributions have drawn rather more on indigenous formulations than Braverman's rigorously Marxist schema. This, in part, accounts for the chronological focus of most studies on the second half of the nineteenth century, where the attractive power of a resuscitated 'labour aristocracy' debate has been at play. Indeed, the decades after 1850 are of strategic importance for more than one historical project, being where those who would explain the post-Chartist quiescence of the British working class meet those seeking the origins of 'modern' industrial relations.

Yet although a great deal of scholarly energy has been devoted to tracing the lineaments of a late nineteenth-century transformation of work - variously theorised as a 'new paternalism', a bureaucratisation of the work process, or a bureaucratisation of trades unions - rather less has been allotted to anatomising work relations prior to the mid-nineteenth century. By and
large, historians of the eighteenth century, especially those of a 'Thompsonian' persuasion, have been unwilling to isolate 'work' as a theme in its own right, preferring to treat labour as one facet of an indivisible plebeian culture.34 This 'global' approach to proletarian life in the eighteenth century has been reinforced by the dearth of good source material on industrial work, a shortage which has precluded detailed workplace studies.

The relative wealth of primary material dealing with workplace practice at the Merthyr ironworks, from the 1780s onwards, may make possible an addition to the still restricted literature on work in eighteenth-century industry. In turn, a deeper knowledge of activity in the collieries, furnace yards and forges of Merthyr may afford a novel point of entry into the debate which now surrounds the apparently simple notion of 'work'. The grid of argument which arose with the appearance of Labor and Monopoly Capital has been splintered by dissatisfaction with the linearity of Braverman's original conceptions. A host of critics have rejected Braverman's insistence on the imposition of capitalist control as an irresistible objective necessity.35 Numerous qualifications have been suggested, prompting vigorous exchanges over the nature of authority, consent and resistance in the workplace. These have now given way to more diffuse discussions in which a
variety of disciplines are raided for more effective conceptual aids, and the impact of the newer theoretical strategems, which were outlined above, has been felt. Several themes compete within this lively field of debate, of which the most compelling are those which call for a surer historical attention to the ways in which human activity is defined as work, and to the cultural connotations of which different forms of work are the bearers.36

Merthyr's ironworks were scarcely typical of eighteenth-century industrial enterprise, it is true; they were of a nineteenth-century scale and sophistication. However, if Merthyr's industry cannot be judged as representative, it can have the advantage of subjecting familiar concepts and classifications to unaccustomed strains. An investigation of work in the town's ironworks is unquestionably germane to the deployment of some of the critical tools now available - be they Marxist, or post-Marxist. Either way, for those who would probe the relation between work and power, or how authority was constituted, in the workplace and beyond, the iron town of Merthyr is a challenging object of study.
Endnotes to Chapter One

Introductory (1): Merthyr Tydfil in History

1 For two classics of the genre, see Islwyn ap Nicholas [T.I. Nicholas], Die Penderyn: Welsh Rebel and Martyr (1944); Harri Webb, Die Penderyn and the Merthyr Rising of 1831 (Swansea, 1956).

2 Rape of the Fair Country, the title of Cordell's 1959 novel, is eloquent in itself. See also, A. Cordell, The Fire People (1972), a fictional account of Dic Penderyn's involvement in the 1831 rising.


7 Consult the survey of literature by G.H. Jenkins, 'Reading History: Modern Wales', History Today, 37 (February 1987), pp.49-53.

8 An idea of the breadth of work can be had from D. Smith ed., A People and a Proletariat: Essays in the History of Wales, 1780-1980 (1980).


12 The domination of Labour has been aptly described as "a system of one-partyism...an institution designed to perpetuate the power of dour apparatchiks", J. Davies, 'Wales in the Nineteen-Sixties', *Llafur*, IV, 4 (1987), p.84.


14 The mutability of the Merthyr tradition was illustrated to striking effect in 1977, when the unveiling of a memorial to Dic Penderyn was entrusted to the less-than-incendiary figure of Len Murray. See G.A. Williams's reflections on the phenomenon in his 'Dic Penderyn: Myth, Martyr and Memory in the Welsh Working Class', in *Welsh in Their History*, pp.135-49.


For an amplification of these overly-brief remarks see N. Harris, Of Bread and Guns: The World Economy in Crisis (Harmondsworth, 1983), especially the appendix 'The End of Capitalism in One Country', pp.229-37.


22 J. Zeitlin, 'From Labour History to the History of Industrial Relations', EcHR, 2nd ser. XL, 2 (1987), pp.159-84.

23 For an attempt to bridge post-structuralism and post-industrialism, in terms of the coming 'information society' see M. Poster, Foucault, Marxism and History: Mode of Production versus Mode of Information (Cambridge, 1984).


26 The work of the 'Cliometricians' can be sampled in J. Mokyr ed. The Economics of the Industrial Revolution (Totowa NJ, 1985).


Chapter Two

Introductory (2): Merthyr in the Iron Industry

Merthyr now stands on the northern rim of the region known as the Valleys. The designation is cultural rather than geographical, suggesting a complex of familiar associations, almost all of them in contradiction to eighteenth-century perceptions of the social topography of the region. Whereas today attention is directed to the heavily urbanised strips on the valley floors, Merthyr then lay in the Hills, as the pointedly reversed eighteenth-century usage had it. The reversal was not exact, for the modern Valleys are not coterminous with the Hills. The older term signified not just the deeply incised plateau of northern Glamorgan and western Monmouthshire, but the massif of the Brecon Beacons as well.

Surveyed from the nucleated settlements in the Vale of the Glamorgan to the south, the area was one of barren emptiness. Defoe, writing before that shift in sensibilities that discovered pleasure in wildernesses, felt only unease and foreboding when traversing the landscape around Merthyr. He found it "mountainous to an extremity...looking so full of horror that we thought to have given over the whole enterprise and left Wales out of our circuit".¹ The area was characterised by a sparse

¹...
population and meagre agriculture, with a corresponding degradation of domestic economy. For the landowner, its profit lay chiefly in the employment it afforded his hounds and fowling piece.

The Valleys are orientated towards the south. Communications mimic the drainage pattern, following the valleys to the sea at Cardiff, Newport, or, in one late-Victorian eccentricity, Barry Docks. The pattern is a legacy of late nineteenth-century industrialisation, where the railways conveyed coal to export installations on the Bristol Channel. To a degree, this pattern was established by the early iron industry. The ironmasters laid out huge sums in promoting canals and tramways to ferry iron southwards, and each had his wharf at Cardiff or Newport. Nevertheless, the iron industry involved both mineral extraction and metal fabrication, and required the movement of semi-finished materials across the Hills by packhorse and tram. The coal industry was merely extractive, and the relentless passage of coal from pit to port effaced an older and rather more nuanced network of flows and exchanges.

The Hills were not restricted to one or two southern outlets: they came within the orbit of the Usk as much as coastal Glamorgan. Merthyr lay closer to Brecon than
Cardiff, and for the ironmasters the larger town to the north ranked as an urban centre of rather greater importance. (Brecon's population in 1801 was 2,756, as opposed to 1,870 for Cardiff). Until the late-1780s, the Merthyr post was directed via the town, and it was to Brecon that the ironmasters looked for financial and legal services.² It was, of course, the county town, with its corporation, the assize, and the privilege of returning a member to Parliament. The town could not boast the aristocratic patronage which the Butes bestowed on Cardiff, but Brecon society enjoyed its full quota of balls and assemblies, and as a social centre it exerted a gravitational pull over a wide area, including Merthyr.

The attachment of the Merthyr ironmasters to Brecon may be demonstrated with ease. Their relations with the town's bank and its legal fraternity, their attendance at social functions, and their intrigues in county and borough politics are readily documented. The plebeian inhabitants of the Hills do not, however, feature as patrons of Brecon's business services, nor of its polite social gatherings. But it should not be thought that workmen and women were confined to the coalfield. For one thing, the area north of the Brecon Beacons was a busy avenue of transit. Black Welsh cattle, reared in the west, were herded along the ancient drovers' tracks towards the
pastures of southern England for fattening. The same routes carried seasonal labour to the harvest fields of the English midlands and beyond. There were many west Walian migrants in Merthyr who had tramped the same byways, and had been drawn to the industrial centres in the Hills. From the same district waggon loads of provisions were sent over the Beacons to feed the accumulating population. The workmen and women of the Hills made the return trip, descending to the market towns of the Usk valley for pleasure, profit, and plunder.

The social geography of the region cannot, then, be drawn in the same emphatic lines that are to be found on the modern map. It had a greater openness and variation, much of which was lost as the Hills were transformed into the Valleys. But it is not enough to take account of a historically altered Welsh geography, for Merthyr was implicated in another distinctive geography - that of the eighteenth-century iron industry.

The Severn was the artery of the iron trade. Arrayed about its arc were the three principal iron producing districts of Britain in 1800: Shropshire, Staffordshire, and South Wales. Navigable to beyond Shrewsbury, the Severn was a river highway of incalculable importance, a conduit for the movement of men and materials on a massive
scale. Shropshire ironmasters from the riverside parish of Broseley had followed its course to found fortunes at Merthyr. It also carried a less illustrious traffic in the hundreds of furnacemen, forgemen, and colliers who rode from one job to the next on one of the innumerable trading craft that plied their way up and down the river. Here was an extensive circulation of peripatetic labour which went largely unrecorded, but which is echoed in snatches of an unexpected dialect, ("Rubbich...wat wee Dood Cal Gob"), or in Victorian memories of enterprising Welsh forgemen, who sauntered home from the Midlands affecting Black Country accents, and with ferocious Staffordshire fighting dogs at their heels.

In the early eighteenth century the arc of the iron industry described by the Severn found its terminus in the forges of Dean or Bristol’s foundries. But from 1760, the terminal point shifted west, into the north-eastern corner of Glamorgan, where the tiny village of Merthyr was host to a wholly new sector of the British iron industry. By 1790, Merthyr village was encircled by four major ironworks: Cyfarthfa, Plymouth, Penydarren and Dowlais.

It was in 1760 that the first furnace at Merthyr went into blast, at Dowlais, high above the village to the east. The initiative came from Thomas Lewis of Newhouse (1699-
1764), who already operated a furnace at Pentyrch, north of Cardiff. Encouraged by the buoyancy of iron prices during the Seven Years War, Lewis spent the late 1750s appraising sites and collecting leases in the Merthyr district. By September 1759, he had assembled a nine-strong partnership, with a modest capital of £4,000. Over the next twenty years, the partnership, which was at first heavily reliant on Bristol mercantile capital, experienced considerable though indecisive fluctuation. But in the course of the 1780s, shares in the Dowlais Company were consolidated into two main blocs. One was marshalled by John Guest (?1721-1787) of Broseley, appointed manager at Dowlais in 1767, and subsequently by his son-in-law William Taitt (1748-1815). The other was in the hands of William Lewis (d.1810), the son of Thomas Lewis of Newhouse, who had by 1786 acquired six of the Company's

Overleaf - excerpt from George Yates's map of Glamorgan (1799) showing the northern portion of Merthyr parish. The village lies on the east bank of the Taff, with the Glamorgan canal running parallel to the river on the west. The ironworks are clearly marked: Cyfarthfa at the head of the canal; Plymouth to the south, alongside the Cardiff road; Penydarren and Dowlais on rising terrain to the east.
sixteen shares to become its largest individual proprietor.9

The other development of the 1760s was sited at Cyfarthfa to the north-west of Merthyr village, near the confluence of the Taf Fawr and the Taf Fechan. In 1765, Anthony Bacon (?1717-1786) and William Brownrigg, both merchants from Whitehaven, leased a total of 4,000 acres of mineral property in northern Glamorgan from Lord Talbot of Hensol and Michael Richards of Cardiff. In the course of 1766-67 they erected a furnace and forge at Cyfarthfa.

Bacon's earliest endeavours in the importation of tobacco had flourished sufficiently for him to establish himself as a merchant in London, and from the late 1750s he began to collect lucrative government contracts, (for victualling garrisons in Africa and carrying slaves to the Americas). Little is known of Brownrigg, but Bacon was clearly possessed of some important connections. In 1763 he entered Parliament as the M.P. for Aylesbury, (in place of the fugitive John Wilkes), and subsequently gained contracts for the supply of cannon to the East India Company, and - in 1773 - to the Board of Ordnance. This last contract proved seminal in the development of the Cyfarthfa concern. This was so not only in terms of its importance as as a major source of revenue, soon
accentuated by the outbreak of hostilities in the American colonies, but as the occasion of Richard Crawshay's initial involvement in the works. Crawshay (1739-1810), a bullish Yorkshireman, had built up a thriving ironware business in London during the 1760s and 1770s, and bought out Brownrigg as Bacon's partner in the Ordnance contract in 1777. In the years that followed, the firm of Bacon and Crawshay became munitions suppliers of European reputation.

Bacon left his extensive properties in Merthyr and Aberdare to be divided among his three natural sons, the eldest of whom - another Anthony Bacon - was to inherit Cyfarthfa furnace. Since all his children were minors at the time of his death in 1786, Bacon's sprawling estate was left in the administration of the Court of Chancery, whence Crawshay and two partners, William Stevens and James Cockshutt, leased back Cyfarthfa until the young heir achieved his majority in 1793. Crawshay's assumption of effective control heralded an ambitious programme of expansion and improvement, the fruits of which were to allow Richard Crawshay to divest himself of his remaining partners, buy out Bacon junior in 1794, and ensure his ascendancy in the national iron trade.
The origins of Plymouth, third of the four great Merthyr works, also lie in the 1760s. In December 1763, John Guest of Broseley and Isaac Wilkinson leased various parcels of land in the parishes of Merthyr and Aberdare from the Earl of Plymouth, together with certain mineral rights and permission to erect a furnace. Wilkinson (c.1704-1784) was a Cumbrian ironmaster, who had already enjoyed success with the establishment of the Bersham ironworks in Denbighshire. He had been one of the original Dowlais partners in 1759, and although he allowed that connection to lapse at an early date he was sufficiently impressed with the potential of the district to begin a rival venture soon afterwards.

Although the new, 'Plymouth' furnace was quickly into blast, the enterprise did not answer Wilkinson's expectations. Managerial problems soon became apparent. Neither Wilkinson nor Guest was able to supervise the project personally, and the latter's younger brother, Thomas Guest (b.1729), proved to be an ineffective substitute. These problems only compounded the difficulties facing a concern that was seriously under-capitalised. By the mid-1760s both partners were prepared to sell, and in Anthony Bacon they found a buyer with a surfeit of the capital necessary to develop the works. For his part, Bacon was eager to take over the clientele
Wilkinson and Guest had established so as to smooth the path of his own Cyfarthfa works, then building further up the valley. In July 1766, he bought their interest in the furnace, together with the associated leases. Wilkinson was absorbed into the management team at Cyfarthfa; Guest was shortly afterwards appointed manager at Dowlais.

For the next twenty years the furnace operated as part of Bacon's 'Cyfarthfa' combine. Only with Bacon's death in 1786 did Plymouth resume an independent existence. The 'Plymouth' portion of his estate was leased to Richard Hill, his agent at Cyfarthfa, who was guaranteed secure occupation until the majority of Thomas Bacon in 1803. The latter aspired only to be a rentier, and upon his coming of age, he confirmed Hill in his possession of the furnace.11

In contrast to Plymouth, the Penydarren works had a quite brief gestation period. As part of the 'Economical Reform' programme of the Rockingham Whigs, Clerke's Act of 1782 debarred government contractors from sitting in the House of Commons. Accordingly, Anthony Bacon was obliged to surrender his contract with the Board of Ordnance, but not before devising a scheme to evade the purpose of the Act. He transferred the contract to Francis Homfray of Broseley, a coalowner in Shropshire and the proprietor of
several forges in the Stour valley. In return, Homfray was to cast and bore the cannon at Cyfarthfa, renting the mill and foundry facilities previously used by Bacon for the same purpose, and using only pig iron from Cyfarthfa furnace.

Francis Homfray withdrew from the arrangement in 1784, but by that time his three sons - Jeremiah, Samuel and Thomas - were preparing, with their father's aid, to set up an independent ironworks at Merthyr. Richard Forman, a financier who "held a lucrative position in the Tower of London", was recruited as an investor, presumably on the strength of the Homfrays' links with the Ordnance, and the first furnace at Penydarren went into blast in 1785. Active management of the concern was vested in Jeremiah (1759-1833) and Samuel (1762-1822) Homfray. Although tensions between the two brothers led to Jeremiah abandoning the management in 1790, the quarrel did little to impede the spectacular growth of the Penydarren works, fuelled by the wealth of the Forman family and the ploughing back of profits.

Penydarren was perhaps the purest expression of a pattern of development common to all the Merthyr works. Ironworks were established under the supervision of men who had gained their experience in the trade in Shropshire or
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Cumbria. They were funded from the profits of mercantile capital, gathered in at London and Bristol. Four of the nine original Dowlais partners, contributing fully half of the stock, were Bristol men. Anthony Bacon emerged from the then thriving port of Whitehaven to be a famously successful exponent of the Atlantic trade, shipping slaves to the American colonies, and tobacco, molasses and other colonial produce to England. His partner Richard Crawshay was, by the 1780s, one of London's leading iron merchants, whose interests stretched from Stockholm to Smyrna. Behind this global commerce loomed the British state, in many respects the customer of last resort for the iron industry. Whether directly, through the Board of Ordnance or the Admiralty, or indirectly, via quasi-independent agencies such as the East India Company, the state, with its appetite for the means of war, provided a powerful stimulus to growth at the Merthyr works. In the figure of Richard Forman, who was both an officer of the Ordnance and a backer of the Homfrays to the tune of £10,000 in the late 1780s, the relationship was made flesh.

Without massive infusions of metropolitan capital the Merthyr iron industry could not have taken off in the way it did. Isaac Wilkinson's early initiatives in the district did not fail because of any technical inadequacy on his part, for a succession of patents testified to his
virtuosity in working metal. He was foiled by his inability to muster a capital sufficient to work the Plymouth site to advantage. Similarly, while the sprawling and constantly shifting partnerships that controlled Dowlais in the early days were undoubtedly an encumbrance, the main difficulty was the shortage of capital, not an excess of owners. "[W]e can find materials for six more Furnaces", wrote William Lewis of Pentyrch, as early as 1790, "if we could find Money to build them".

The later emergence of Dowlais as the world's largest ironworks owed less to the existence of a more compact partnership than to the sustained accumulation of capital. A comparison with Penydarren is instructive. The Homfrays could in no way match the vast mineral endowment of Dowlais, but their access to Forman's coffers allowed them to outstrip their rivals in the 1790s.

* * *

The results of the influx of capital became startlingly visible in the 1790s. The number of blast furnaces in the parish increased from four in 1786 to seventeen in 1811, while individual furnace capacity probably doubled in the course of the French wars. (The difficulties of measuring the growth in output are aired in an Appendix, pp.422-40).
Although data concerning the numbers employed within the works are scant, it is known that '400 men and boys... exclusive of familys' were employed at Dowlais by 1794. The larger Penydarren works gave employment, on one sober estimate, to over nine hundred men, women, and children ('reckoning in the miners') by 1802. Richard Crawshay's Cyfarthfa works was bigger still, reputedly being the largest single ironworks in the world by 1800. By the standards of the day this was industrial gigantism. It was floated on a tide of migrant labour which swept into the area. The first census of 1801 revealed Merthyr, "which twenty years ago scarcely deserved the name of village", to have nearly 8,000 inhabitants within its parish boundaries. Ten years later, the population of the parish had leapt to over 11,000 - a decennial increase of some 44%.

The sudden emergence of Merthyr as an industrial centre was, as one commentator justly observed, "the triumph of fact over probability". The nature of the dynamic which permitted such phenomenal growth can, perhaps, be grasped by a brief excursion through a literary genre which, from the 1780s, provided the dominant representation of Wales for English readers: picturesque travel literature.
The 'Welsh tours', which came off the presses in such profusion during the 1790s, were for the most part concerned with rhapsodising on the antiquities of the principality, but there was also a good deal of musing as to the future of Welsh society. Wales was not considered as unchanging, but change was understood to be gradual and linear. As a rule, the Welsh were feted for their rustic simplicity: a sheltered existence shielded them from the corruptions of a commercial, urban society. Yet it was now felt that a traditional way of life was proceeding inexorably towards its dissolution. The waxing of commercial links between England and Wales, and the increasing ease of communications were sapping the ability of the Welsh to withstand 'refinement', and the corruptions it brought in its train. English manners invaded via the turnpikes and coach routes. They infected the market towns and the wayside halts, and from these percolated through the countryside to threaten the mountain fastnesses that were the last bastions of Welshness.

However, Merthyr was inexplicable in terms of this explanatory framework, which accounted for change by reference to the transmission of modes of behaviour. The transformation of Wales implied in these writings was one of melancholic decay, in which the intercourse of trade,
morals, and language drew the Welsh into parity with the English. Yet Merthyr owed its existence to abrupt structural revolution, not to the steady infiltration of new economic or cultural mores. The course of industrial development was not evenly paced; it proceeded by convulsive leaps, which catapulted Merthyr to the head of the iron trade.

The national iron industry into which the new works at Merthyr emerged was already enjoying a period of unmatched prosperity. These were years of unbounded growth and of bold new ventures. The background is familiar from the classic textbooks, and is centred on two crucial transitions: the one from vegetable to mineral fuel, the other from water to steam power. The first of these, the advent of coke smelting, is one of those episodes in the Industrial Revolution that is so encrusted with legend that it is tempting to pass over it with only perfunctory acknowledgement. Yet its importance cannot be gainsaid, least of all at Merthyr.

Limits to the physical availability of charcoal had set bounds on the absolute quantity of iron that could be smelted and forged. More than that, the voracity of furnaces for charcoal had required that furnaces and forges were dispersed. Concentration of plant would
annihilate local stocks of charcoal faster than they could be replenished. Furthermore, charcoal being a friable material, it could only bear a certain weight of ironstone and limestone (the other ingredients of the furnace charge) before disintegrating. Hence furnace stacks could never be built to a height of more than about thirty feet; any more and the contents would be prone to collapse.

While the impediments posed by vegetable fuel were swept away by the application of coke, the availability of Boulton and Watt's improved steam technology after 1775 eased the constraints imposed by water as a source of power.22 Then, in the mid-1780s, coal and steam were joined in a yet more potent combination when Henry Cort perfected iron 'puddling', a technique of refining cast iron which satisfactorily used coal as a fuel. After being 'puddled' in a small, coal-fired air furnace, the metal was rolled at adjacent mills, in a procedure singularly amenable to steam power.23

It has been argued that the old charcoal-fuelled industry was by no means as derelict as was once thought, that historians have been more sensitive to the crisis of fuel and power than contemporaries ever were, and that failure lay more more in an incapacity to respond to galloping domestic demand rather than chronic debilitation.24 In
The supposed extinction of the charcoal iron industry in the mid-eighteenth century has now been exposed as a historical canard. Even so, the upswing of the 'new' iron industry from the 1760s, and still more from the 1780s, remains stunning in its impact.

The technological transformation of the iron industry in the second half of the eighteenth century itself occurred within the context of a quickening national economy, in which the market for iron wares deepened and widened. To traditional sources of demand were joined new areas of utilisation, of which metallic engineering and construction were the most striking instances. The potentialities of iron as the universal material were show-cased in the iron districts themselves, whether at the Iron Bridge over the Severn or in the ingenuity of Boulton and Watt's Soho workshops. War, or the threat of war, gave added impetus to the trade: it was almost a guarantee of prosperity. War generated the craved-for armaments contracts to which allusion has already been made. In addition, any serious conflict in northern Europe endangered Britain's communications with Sweden and Russia, the main sources of imported iron. Given the aggression and jealous expansionism of British trade and navigation in the eighteenth century, war can scarcely be regarded as an exogenous factor in the growth of the iron
industry. It appears more as an intrinsic element. Even so, the revolutionary and Napoleonic wars proved an exceptional bonanza for the primary producers of iron, dwarfing all previous struggles in their scope and intensity.25

Just how remarkable the flowering of the South Wales iron centres was becomes clear when set against the backcloth of generalised growth in the industry. From the late 1780s South Wales entered its anni mirabili, with Merthyr in the van. The raw statistics are eloquent in themselves. In 1788 a mere 12,500 tons of pig iron were cast in South Wales, only half the output of Shropshire, the then premier iron district. By 1796 production topped 34,000 tons to overhaul Shropshire, and by 1806 exceeded 78,000 tons.26 This represented 30% of total British output and marked South Wales's triumph as the largest iron-producing district in the kingdom. None of the other thriving areas could equal its frenetic pace of expansion. Despite quadrupling their make in the thirty years prior to 1806 the once dominant Shropshire ironmasters saw their share of national output shrivel from 40% to 22%. In South Wales, no fewer than eight major new works were laid down between 1785 and 1805. Penydarren was established at Merthyr in 1785, and seven other works followed in quick succession along the north-easter rim of the coalfield —
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Blaenavon (1789), Ebbw Vale (1789), Nantyglo (1791), Tredegar (1800), Union (1800), Aberdare (1800), and Abernant (1802).27

The older Merthyr works experienced the introduction of new plant on a continual basis, and on a scale that rivalled the creation of entirely new works in neighbouring valleys. Crawshay claimed to have set out nearly £50,000 on new facilities at Cyfarthfa between 1786 and 1793.28 At Dowlais, the capital value of the works sprang from £8,000 in 1786 to a putative £120,000 in 1804.29 It was with some justification that one seasoned observer of the iron trade concluded in 1796: "In short it appears to me that South Wales must in a very few years be the Siberia of this Kingdom".30

Foremost among the conditions which enabled Merthyr's trajectory to soar near to the vertical in the 1790s was the very absence of an industrial past, a tradition of mining and manufacturing on which to draw. Staffordshire's blast furnaces emerged in the midst of an already dense population devoted to mining and metal manufacture.31 The Shropshire coalfield, bisected by the Severn, had been extensively exploited for over two centuries by 1800.32 The ironmasters of south Yorkshire and north Derbyshire grew in symbiosis with the heavily
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stocked metal-working trades in their region. The lack of any corresponding development in Merthyr did have definite drawbacks, not the least of which was the necessity of engrafting precious iron-working skills from the Midlands. Nevertheless, Merthyr's 'backwardness' was also the foundation of its pre-eminence. It allowed the ironmasters to exercise the "privilege of historical backwardness" to the full. Pioneers in virgin territory, they were able to lease a super-abundance of mineral wealth for trifling sums.

The Dowlais Company, as first-comer, got the best bargain. For £38 per annum it acquired the right to excavate minerals from over 2,000 acres of common land for a ninety year period. The terms at Cyfarthfa were scarcely less favourable. In 1765 Bacon and Brownrigg secured a vast tract on the west bank of the Taff and stretching into the neighbouring Cynon valley on a ninety-nine year lease for £100 per annum. More importantly, the Merthyr works were ideally suited to explore the potentialities of the 'new' iron industry, whose technological parameters had been repositioned by coke smelting and Cort's puddling process.

Large integrated ironworks were now possible, where furnaces, forges, and mills could be closely combined, adjacent to coal reserves. This could be done with an
unmatched thoroughness at Merthyr. The works there did not have to negotiate a transition from charcoal; they were coke-fired from their inception. There was no question of adapting and enlarging old charcoal furnaces. At Merthyr, they were of the latest design, and of unprecedented dimensions. Nor were the Merthyr men obliged to rejig the relations between hitherto disparate units of production. Works like Cyfarthfa and Penydarren were constructed with integration in mind: Penydarren was laid out so that each successive operation followed its predecessor in a continuous flow downhill, following the contours of its valley location.35

The measures of furnace capacity that are available bear out the modernity of Merthyr. The blast furnaces of Staffordshire - no technological laggards - averaged a weekly output of 41.7 tons in 1812. For South Wales the average was 45.5 tons per week, and the Merthyr works by themselves reached 48.1 tons.36 There was no inhibition in the adoption of new forge techniques either. Cort's new process was championed at Merthyr. The inventor oversaw the commencement of puddling at Cyfarthfa personally, and it was at Crawshay's works and neighbouring Penydarren that the process was pioneered as a commercial proposition. It subsequently gained renown as the 'Welsh method', although 'Merthyr method' might
have been more apt, for in this too, the Merthyr works towered over their rivals. By 1791 Richard Crawshay could boast of his works thus:37

"we work all with Fossel Coal—my Blast Furnaces are 60ft high, each Furnace produces about 1400 Tons p.Annum—we make use of Air Furnaces instead of Finerys, when the Metal is brought to nature, instead of Hammers, we put it between a pair of Rolls, & crush it like a paste..."

These jottings describe the acme of iron technology at the time of writing, a level of technique without peer anywhere in the world. Here was the arresting novelty of Merthyr, a global centre of iron production, sited in the midst of a region that had previously supported only feeble cultivation.

* * *

The analysis which follows will explore some of the consequences that arose from the central feature of Merthyr's development – the juxtaposition of a preternatural industrial maturity and a 'backward', peripheral location. Before doing so, it will be well to consider the potential and the limitations of the primary sources that are available for such an exploration.
There is one printed book which might fairly be called a primary source, that is, Charles Wilkins's *The History of Merthyr Tydfil*. First published in 1867, with a second and hugely expanded edition in 1908, Wilkins's *History* is a sprawling, ill-sorted compilation of local legend. Indeed, it has been condemned as "a great mass of quasi-pleasant descriptions and would-be lively stories" by no less an authority than Sir Lewis Namier.\(^{38}\) While it is true that Wilkins was not hampered by the discipline of modern scholarly practice, and that his researchs were offered up in an excruciatingly florid prose, the *History* is not without value. It is only due to Wilkins that many episodes of Merthyr's early industrial history, gleaned from interviews with aged inhabitants of the district in the mid-nineteenth century, have been preserved at all. The volume should be used with the utmost caution, but the regularity with which independent corroboration can be found for many of its more fanciful tales is surprising. Moreover, Wilkins's multiple lapses and misconceptions are themselves important indicators of Merthyr's experience in the nineteenth century. It is telling that he should have been able to report the presence of "a poet named John Thelwall, a gentleman and a Cockney", yet remain innocent of Thelwall's identity as the leading English democrat of the 1790s.\(^ {39}\)
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One source of information that is usually available to the researcher working on a substantial urban settlement c.1800 must be discounted at Merthyr at once. No newspaper was published in the town until 1833, when the place had close on 25,000 inhabitants. Typically, Merthyr's industrial precocity was matched by a tardiness in collecting the attributes of an urban centre. It was to the English county towns of Gloucester and Hereford, traditional marketing centres and seats of political and ecclesiastical administration, which had both supported newsheets from the early decades of the eighteenth century, that the ironmasters turned. Only in 1804, with the commencement of the Cambrian at Swansea, does a weekly Welsh press begin. The Cambrian has been sampled, but its focus was not on the Hills, and the data it yields is for the most part marginal to the project in hand.

Fittingly, the available manuscript collections are those of the ironworks to which Merthyr owed its existence as a town. However, these collections vary enormously in quantity and quality. At one extreme, the Penydarren works has left almost no independent trace of its existence whatsoever. The letterbooks, leases, ledgers, and all the paraphernalia of a sizable business venture have been scattered and lost.40 The Plymouth works has yielded little more in the way of manuscript remains. The
prime source is a letterbook of Richard Hill's covering the years 1786 to 1792. Unfortunately, its contents are largely concerned with the administration of Anthony Bacon's estate rather than the running of an ironworks, and so provide little that is germane.\(^41\)

The same criticisms cannot be made of the Dowlais Company. Its records have been preserved in awesome profusion, and it is from this massive hoard of paper that the core documentation has been culled. Aside from a vast miscellany of maps, deeds, technical drawings, and oddments that defy classification, mostly of a mid-nineteenth-century vintage, a formidable run of letterbooks is stored at the Glamorgan Record Office. The outletters of the Company between 1782 and 1794 have been bound in one plump volume of some 650 folios, and from 1792 the burgeoning crop of incoming correspondence, sorted in annual batches, may be consulted. A fraction of this voluminous assemblage, totalling nearly 600,000 letters, was published in 1960 in a deservedly well-known anthology - *Iron in the Making: Dowlais Iron Company Letters, 1782-1860*.\(^42\) It is a text that is often cited, but inevitably it cannot do justice to the full wealth of material intact in the Dowlais archive. Nor can it serve as a basis for the study of social relations in early industrial Merthyr. Its chronological compass is too
wide, and its attempt at a comprehensive coverage of material required the allocation of a good deal of space to themes that are beyond the scope of this thesis, such as the Company's financial structure or commercial policy.

The Dowlais letterbooks have been systematically worked through from the 1780s to the end of the French wars. The point of termination has a historiographical justification, but it has also been determined by the diminished utility of the Dowlais archive after the death of William Taitt in 1815. Taitt was uniquely positioned to commit a detailed and knowledgeable commentary on the running of an ironworks to paper. He was responsible for the marketing of Dowlais iron, and for the last quarter-century of his life oversaw its despatch from the Company's Cardiff yard. Consequently, his appearances at Merthyr were infrequent, yet he was intimately acquainted with the layout and functioning of the works and its leading personnel. Added to a capacity to comment was an inclination to do so. Taitt, as a major shareholder in the Company, took an understandable interest in every aspect of its performance, and was not afraid to voice his fears. Astringent in temperament, he took advantage of his tantalising proximity to Merthyr to bombard successive managers with a hectoring and unsparingly critical mail, often on a daily basis. The cessation of this epistolary...
monologue, with his death in 1815, cuts away the most densely informative sector of the Dowlais manuscripts.

An analogous problem can be found in the principal source for the Cyfarthfa works: Richard Crawshay's letterbook for the years 1788 to 1797. For an investigation of workplace relations at Cyfarthfa, the earlier portions are the most pertinent, when Crawshay, like Taitt, was an absentee. From 1791 onwards, as Crawshay spent an increasing amount of time at the works, explicit references to the internal life of the works dwindle. Even so, Crawshay's letterbook retains immense interest because of the writer's unashamed cultivation of the leading industrial and political figures of the day. Crawshay's correspondence took in every major ironmaster in the country, and it imparts a vivid sense of the collective sentiment of the 'trade'. Crawshay was also assiduous in approaching the most authoritative government figures, and thought nothing of taking his problems to William Pitt himself. In these documents, national tendencies and national emergencies can be set against the minutiae of industrial practice in Merthyr.

The Dowlais and Crawshay manuscripts have been supplemented by a number of other collections whose nature and peculiarities require no urgent comment, and will only
be discussed should the context demand it. However, special mention should be made of two sources which have not featured in the historiography of Merthyr hitherto. First, among the Hale manuscripts in the Gloucestershire Record Office are a series of letters from William Lewis of Pentyrch, one of the Dowlais partners, to his brother-in-law John Blagden Hale of Alderley, Glos., written between 1785 and 1799. These have added materially to the understanding of the Merthyr iron industry presented below, particularly with regard to the 'community' of ironmasters. Second, there exists among the Lloyd-Jones collection in the Shropshire Record Office a number of the papers of Gilbert Gilpin (1766-1827), the one-time clerk to John Wilkinson (1727-1808), the son of Isaac Wilkinson and the greatest ironmaster of his day. Of chief interest are a handful of letters written by Gilpin from South Wales in the mid-1790s. They have a two-fold importance. As an indefatigable collector of technical information, Gilpin sought out data on rents, royalties, output levels, and the like wherever he went, and his letters often provide a convenient digest of information that would otherwise have to be gleaned from widely scattered sources. But his unique value becomes apparent when his inquisitiveness takes a mischievous turn, and he reports on the foibles of the Crawshays, the Homfrays, and their peers. Here Gilpin supplies an incomparably rich
and often comic portrayal of the Merthyr ironmasters at the beginning of their ascendancy.

There is one final perspective worthy of mention, that of George Hardinge (1743-1816), the senior justice for Glamorgan, Brecon and Radnor. Twice a year, from his appointment in 1787 until his death in 1816, he passed through Merthyr, en route from Brecon to the Cardiff assizes. He had, then, an opportunity of viewing at first hand a place that was rapidly becoming notorious for its 'turbulence'. He also gained the acquaintance of the town's ironmasters, and struggled in vain to temper their idiosyncrasies. Although not embodied in any single manuscript collection, Hardinge's correspondence and public utterances are of importance as the response to the emergent 'metropolis of ironmasters' from the foremost judicial agent of the state in the region.

By using new or under-utilised material, and subjecting ostensibly well-known sources to an intensive reading, it is possible to elucidate aspects of life and industrial practice previously thought impervious to analysis. This may be done on the basis of external reportage from visitors to the town, or testimony from those at the pinnacle of Merthyr's social hierarchy, that is, the ironmasters and their immediate associates. What is not
available is the perspective from the casthouse or the coal level, from those who laboured for the ironmasters. Of course, this difficulty is far from uncommon. It could be argued that, quite apart from the differential perishability of materials of demotic provenance, the eighteenth-century plebeian world was by its very nature arcane in character. However, the problem is aggravated at Merthyr by the acute under-development of the place prior to industrialisation. Where population had been sparse, the means of exchanging or disseminating information and opinion must have been correspondingly atrophied. The town emerged at break-neck speed, bereft of urban traditions and populated overwhelmingly by immigrants, and so the types of public ritual and patterns of behaviour which historians of more ancient centres have felt bold enough to decipher are not present at Merthyr.

Yet it is inadmissible to disregard the experience of the bulk of the town's inhabitants simply because the documentation does not exist in gratifyingly concrete forms. Fortunately, the richness of the ironmasters' archives, bolstered by a range of other primary sources, will allow a degree of access to proletarian Merthyr. Very often, the available evidence is strewn about in disparate scraps. However, it is to be hoped that a scrupulous process of alignment and inference can lead to
Merthyr in the Iron Industry

an arrangement of these fragments in such a way that they offer mutual reinforcement.

1. B. Boeoe, A Tour through the Whole Island of Great Britain (1827), 1, p.34.


4. See, inter alia, CTH D/B G (Gwylau MSS.) 1812 A-S fo.43, T. Gittins to J.J. Guest, 27 February 1812, for the example of John Hearn, alias 'Shropshire Jack', who had formerly 'worked for one James Shannon a Navigator at Rossbeck', and was held to be in good for a robbery at Crickhowell.

Endnotes to Chapter Two

Introductory (2): Merthyr Tydfil in the Iron Industry

1 D. Defoe, A Tour through the Whole Island of Great Britain (1927), I, p.54.


4 See, inter alia, GRO D/D G (Dowlais MSS.) 1812 A-S fo.43, T. Gittins to J.J. Guest, 20 February 1812, for the example of John Heath, alias 'Hampshire Jack', who had formerly "worked for one James Shannon a Navigator at Dowlas", and was held in Brecon gaol for a robbery at Crickhowell.

'Gob' was a term relating to the longwall system of working coal, perfected in Shropshire. Strictly speaking it refers to the excavated space underground into which rubbish was packed; see M.W. Flinn, The History of the British Coal Industry. Volume 2: 1700-1830, The Industrial Revolution (Oxford, 1984), p.83. For its usage at Dowlais, GRO D/D G 1810 T-W fo.227, E. Lloyd to ?, 13 May 1810.


There is no absolutely authoritative text detailing the origins of the Merthyr ironworks. Many of the older accounts are confused, contradictory, and embellished with legend. (For an example of inaccuracies which were rendered into 'fact' through repetition, see W.W. Price, 'The Legend of Anthony Bacon', BPCS, XI, 2 (1943), pp.109-12). John Lloyd's The Early History of the Old South Wales Iron Works, 1760-1840 (1906), with its firm grounding in manuscript sources, remains useful. However, Lloyd's reliance on the Maybery MSS. alone, extensive though that collection is, means that his work is far from comprehensive. The sketches of the different works which follow have, then, been pieced together from a wide number of sources. This has been an intricate process, and to validate every assertion individually would submerge each sentence under a mass of footnotes. To avoid this, a single footnote is given at the tail of each section, listing the chief works which have been used.

Merthyr in the Iron Industry


12 Wilkins, p.244.

13 Lloyd, pp.86-91; GRO D/D Pe 2, 3(c), 3(d).


15 GloRO D1086/F120, W. Lewis to J. Blagden Hale, 7 February 1790.

Merthyr in the Iron Industry


18 Population figures for Merthyr parish, 1801-61, (with percentage increases in brackets):

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Percentage Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1801</td>
<td>7,705</td>
<td></td>
</tr>
<tr>
<td>1811</td>
<td>11,104</td>
<td>(44%)</td>
</tr>
<tr>
<td>1821</td>
<td>17,404</td>
<td>(56%)</td>
</tr>
<tr>
<td>1831</td>
<td>22,083</td>
<td>(26%)</td>
</tr>
<tr>
<td>1841</td>
<td>34,997</td>
<td>(58%)</td>
</tr>
<tr>
<td>1851</td>
<td>46,378</td>
<td>(24%)</td>
</tr>
<tr>
<td>1861</td>
<td>49,794</td>
<td>(7%)</td>
</tr>
</tbody>
</table>


20 The following paragraphs are based on an extensive reading of the genre. Individual texts are listed in section (vi) of the bibliography.


22 However, steam power was of rather more importance to ironmasters operating on the power-starved west midlands plateau, than to those in the drenched Welsh Hills.

Merthyr in the Iron Industry


27 Exhaustive details are in Lloyd.

28 GwRO D2.162 fo.136, Richard Crawshay (hereafter RC) to Lord Hawkesbury, 6 May 1793.

29 Compare the estimate in GloRO D1086/F117 bdle 1, W. Lewis to J. Blagden Hale, 1 June 1786, with that in GRO D/D G 1804 A-W fo.185, W. Taitt to T. Guest, 28 June 1804.

30 SRO 1781/6/22, G. Gilpin to W. Wilkinson, 24 October 1796. Of course, the contemporary connotation of Siberia was of a major iron-producing region, not the Gulag.

32 Trinder, Shropshire, pp.4-12.

33 D. Hey, The Rural Metalworkers of the Sheffield Region: A Study of Rural Industry before the Industrial Revolution (Leicester University Department of Local History Occasional Papers, 2nd ser. no.5, 1972). In 1790 Richard Crawshay and Samuel Homfray toyed with promoting a nail manufacture along the line of the new Glamorgan Canal, but nothing seems to have come of the suggestion: GwRO D2.162 fo.76, RC to J. Richards, 14 October 1790; CCL MS.2.716(1/3) fo.15, 7 October 1790.


35 Svedenstierne, Tour, p.51.

36 Calculated from figures given by Gilbert Gilpin in GRO D/D G 1817 (3) G fos.366 & 378, Gilpin to W. Wood, 23 September & 18 December 1817. The average weekly make in Shropshire in 1804 was a mere 33.9 tons; SRO 1781/6/28, G. Gilpin to W. Wilkinson, (?1804).

37 GwRO D2.162 fo.93, RC to 'Baron Demodoff', 3 March 1793.

38 L.B. Namier, 'Anthony Bacon', p.77.

39 Wilkins, p.150.
40 The meagre manuscript remains of Penydarren are divided between the National Library of Wales (NLW 15593E), and the Glamorgan R.O. (Penllyn Castle MSS.).

41 Hill's letterbook is preserved at the National Library, NLW 15334E.


43 GloRO D1086/F116-28.

44 SRO 1781/6/21-30.

45 Biographical details are given in G. Hardinge, Miscellaneous Works (1818), I, pp.x-xliv, 'Memoirs of the Author'. Volume One of his Works contains several of Hardinge's addresses to the grand jury of Glamorgan. John Bird of Cardiff also recorded many details of Hardinge's judicial activities in his diary, (CCL MS. 2.716), and some illuminating letters from the judge to the Duke of Portland re. Merthyr and its ironmasters are to be found in the files of Home Office correspondence, (especially PRO HO 42/61).

46 Hardinge's reactions to the political crises of the 1790s are of special interest. He was the nephew of Lord Camden, the Wilkite hero, and was in his youth "a most enthusiastic patriot", The Annual Biography and Obituary (1817), I, p.277. But an accommodation with the ministry in the 1780s underwent the familiar acceleration in the 1790s; as he told Lord Grenville, when announcing his disavowal of Grey's motion for
parliamentary reform in 1793, "I am not worse in what is called "apostasy" than others", (BL Add. MS. 58986 fo.41, G. Hardinge to Lord Grenville, 4 May 1793). His addresses to the grand jury of Glamorgan, exemplary in their loyalism, constitute a fascinating guide to the alarums of the revolutionary era.
Chapter Three

The Varieties of Labour

Merthyr Tydfil had one reason for existence — the production of iron. And for the great majority of its inhabitants, work in the furnace yards or forges, quarries, or collieries, was inescapable. Indeed, it was the profusion of such work that drew these (or more rarely in 1800) their purses. It would be wrong to infer from this the industry town, exhibited an absolute occupational uniformity. The forms of labour performed by one and again page divided, far more so than any simple division between mineral extraction and metal fabrication might suggest.

The bulk of this chapter will be given over to a depiction of these varied forms, attending closely to the successive processes that contributed to the final emergence of merchantable iron bar. However, the object of this survey is not so much to reconstruct the precise technical schedule followed in the making of iron, it is to facilitate an understanding of how the actual performance of work was governed by interlocking matrices of authority, custom, and craft solidarity.
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While there were many different experiences of work at Merthyr, there were some phenomena which were universal to the iron district. These impinged on all inhabitants, irrespective of their occupation, and it was these which gave work at Merthyr its palpable, not to say overwhelming presence.

The ironworks dominated the landscape: they were by far the largest man-made structures in the area. As Penry Williams' painting of the Cyfarthfa works suggests, a single blast furnace dwarfed any building to be found in the village, especially if credence is given to Crawshay's claim to have erected furnaces sixty feet high by 1791. The furnace-forge-mill complex which was the hub of the

Overleaf - The Cyfarthfa ironworks in the early nineteenth century, as viewed from the east bank of the Taff by Penry Williams (1798-1885), the son of a Merthyr house-painter. 'Eolus', the gigantic overshot waterwheel, erected by Watkin George in 1796, is clearly visible in the centre of the plant. To its left stands the battery of five blast furnaces, each fronted by its casthouse. To the right is the upper forge, its roof studded with the chimneys of puddling furnaces.
productive process was immense, taking up many acres. And the towering structures at its heart were productive of much else besides iron. For one thing, ironmaking was inseparable from combustion, and so the approach to Merthyr was signalled not by glimpses of the furnace banks, but by the enormous quantities of black smoke that issued from them. This was, in itself, sufficient to set in train the apocalyptic imagery beloved of contemporary literary tourists.

Merthyr appeared, thought one, "like the smoking ruins of some vast city, a prey to the devouring element". Another pitied its inhabitants, the "sooty legions, so disfigured by smoke", who had "more the look of infernals than human beings". It was the blast furnaces that contributed most to the blackened atmosphere, but the forges and rolling mills, the engines, the coking and calcining kilns were all voracious consumers of raw and coked coals. Crawshay estimated that two hundred tons of coal were being burnt daily at Cyfarthfa in the mid-1790s, releasing a proportionate quantity of smoke into the atmosphere. The combined output of the four works was more than enough to darken the sky, and deposit the crust of smuts and filth which lent the town its dingy air, and the air its sour taste.
The sombre pall had its obverse in the flames of the furnaces and forges:  

"Hardly anything can be conceived more awfully grand than the descent on a dark night into the vale of Myrther, from any of the surrounding hills. On a sudden the traveller beholds numerous volcanos breathing out their undulating pillars of flame and smoke, while the furnaces below emit through every aperture a vivid light; the whole country seems in a blaze.

After dark the furnace flare shone out like a beacon, visible for miles. Its glare lit up the immediate vicinity of a works, enabling even the inexperienced visitor to pick his way through the chaos of tips and yards which surrounded the village. Such was the fiery light imparted by ironmaking - allied to the parsimony of the parish ratepayers - that Merthyr still lacked any kind of street lighting in the middle of the nineteenth century. In the late eighteenth century the paucity of civic initiative went unremarked, but the arresting juxtaposition of light and shadow was seized upon by romantic travellers, eager to enthuse upon the 'awful sublimity' of the scene, replete with endless allusions to hell-fire, Pandemonium and the 'infernal regions'.

Unquestionably the spectacle had a real brilliancy, some impression of which may be gained from Thomas Hornor's painting of the Dowlais rolling mill at night (1819).
Although poorly executed, it expresses well the powerful luminosity of an ironworks: intense beams of light escape from the open-sided mill, throwing the clutter of castings and waggons in the yard into relief, and illuminating the facing buildings, the sky, and the surrounding mountainside. The effusive terms which contemporaries employed to describe such scenes was more than a fashionable literary contrivance, it reflected the genuine thrill with which they surveyed the great ironworks.  

The visual thrill of iron, and the 'infernal' associations it conjured up, was enhanced by noise. Merthyr was never quiet. The ironworks followed their own tempo, which

Overleaf - Dowlais rolling mill at night, painted by Thomas Hornor in 1819. In the glaring light of the mill, men can be seen passing blooms through the rolls, changing rolls, and weighing finished bars of iron. (On the other side of the mill lay the Dowlais brook, flowing down to its confluence with the Morlais brook, and on the opposite bank, the Pwllwyhead mine patches worked by the Penydarren Company. This ground, facing onto the mill, was to be the scene of the 'riot' between Dowlais and Penydarren men in November 1809).
Variation of Labour

rarely disturbed in operation. The blast furnaces, of
necessity operating night and day, and the subsequent
finishingdepartment, suffered alike. In the furnace
complex, the business of supplying a continuous blast was
deafering. The agitation of engines and waterwheels, and

upwardising force and mechanical regularity. Exposure to
a battery of such engines, each contributing its own
oscillation back in a general oscillation, was terrifically
annoying, and the wash of the water on the deck
reached far beyond the boundary of the works. It
announced the overwhelming character of ironworking in the
whole neighborhood.

Hence the entirely industrial atmosphere of Hepworth, with
its "coarseness of evils, the blast of furnaces, and the
rarely admitted of interruption. The blast furnaces, of necessity, operated night and day, and the subsequent finishing department followed suit. In the furnace complex, the business of supplying a continuous blast was deafening. The agitation of engines and waterwheels, and the wheezing of the bellows which generated the blast were productive of an incessant din. An account of the bellows house at Coalbrookdale (Shropshire) described the noise as "louder than peals of thunder...All discourse is suspended during your visit to this noisy abode of Eolus, whose voice commands silence". The furnace itself was distinguished by its continual roar, produced by the forced passage of the air blast into its core. The refining of cast metal was just as thunderous. Balls of decarburised metal were pounded beneath helve hammers exceeding half a ton in weight, descending with pulverising force and mechanical regularity. Exposure to a battery of such hammers, each contributing its own staccato beat to a general cacophony, was literally stunning. And the crash of the hammer on its block resounded far beyond the boundary of the works. It announced the unremitting character of ironworking to the whole neighbourhood.

Hence the uniquely industrial atmosphere of Merthyr, with its "contusion of anvils, the blast of furnaces and the
whirl of wheels". The town was acknowledged to be oppressive and dirty, but it should be stressed that had not, in 1800, descended to the point of ecological collapse that was reached in the mid-nineteenth century. It was still possible - just - to contrast Merthyr's mountain situation favourably with the unwholesomeness of urban life in Bristol or London.

It was more the immediacy of industry than the degraded living conditions of its inhabitants, which set Merthyr apart, and that immediacy was based on more than the buffeting noise, or the tang of hot metal which hung in the air. The performance of labour was unusually visible. It was quite unlike the cloth industry of the West Riding that Defoe had described so famously in the 1720s - an account which has coloured thinking on the effects of early industrialism ever since. In the region around Halifax, the textile industry may well have depopulated the landscape, immuring clothworkers within the cottages and small manufactories. But at Merthyr the reverse was true: the hillsides overlooking the town teemed with workers. Work at the limestone quarries and the brickyards was perforce carried in the open air, and so too was a great deal of mineral extraction. Ironstone was commonly obtained by forms of surface excavation. Coal also outcropped across the district, and where extensive
underground workings were necessary, they were entered by levels rather than pits.

Operations at the furnaces and forges were encased within an imposing masonry shell, yet they were by no means enclosed. The difficulties of ventilating a choking work-area ensured that forge and mill buildings were tall, open-sided structures into which 'strangers' might peer or wander at will. Moreover, the convulsive spurt of expansion in the last years of the eighteenth century produced an industrial environment of extreme disorder. 'Modern' industry brought no segregation of work and leisure. Rather, sites of work and areas of residence and recreation were promiscuously intermixed and continually encroached on one another. Squatter cottages were put up on mine patches, built from the rubble that was strewn across those shattered landscapes; dwellings were squeezed between calcining kilns and coking ovens; even the crevices between the blast furnaces were colonised.

* * *

"The South Wales coalfield...possessed not only large ironstone beds interstratified with the coal seams, but also a geological formation which caused the seams of both coal and ironstone to outcrop at surface along the northern rim...Limestone was found in the same
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carboniferous strata as the coal and ironstone, outcropping only a few miles to the north, and the fireclay needed to line the furnaces was found and worked in the coal levels".11

In short, Merthyr was not only endowed with the mineral profile on which the coke-smelting iron industry was predicated, but those minerals were accessible to an extraordinary degree. Plainly, this circumstance was the basic determinant of the extractive techniques adopted. When ironstone (or 'mine' as it was called) lay just under the topsoil, and coal jutted visibly from the mountainside, crude but highly effective forms of surface excavation could be used. These were not subsidiary ways of working, restricted to marginal outcrops, or existing in the shadow of more sophisticated and productive operations: they were predominant. The superintendent of miners at Cyfarthfa in the 1780s was equipped with a telescope with which to scrutinise the workers in his charge, spread over the slopes behind the works.12 Surface work was recognised as a distinct local specialism. When Richard Crawshay considered drafting in Cornish miners to overcome a labour shortage in the late 1780s, he believed that they would permit an experiment in technique that was not feasible as long as Cyfarthfa remained dependent on local labour: "would they [the Cornishmen] not raise Mine under Ground to advantage whilst the Natives work in the old way"?13
The fundamental form of working in the 'old way' was 'patching'. It was simplicity itself. The miner as assigned a patch of ground and told to start digging. Raw mine was wrenched straight out of the ground. The other common method of procuring mine was 'scouring'. It was a technique peculiarly well-adapted to South Wales, with its mountainous relief and torrential climate. It involved no more than putting a makeshift dam across the hillside, behind which an artificial pond would form. Once a sufficient volume of water had collected, the dam could be breached and the torrent would rip away the topsoil and dislodge a quantity of mine from the lower slopes. Once loosened in this way, the mine could be broken up and shovelled into waggons ready for removal to the furnace bank.

This sort of work was but little removed from the round of ditching, hedging, clay- and gravel-getting, and other heavy digging tasks that fell to the lot of the agricultural labourer. There was little, in the nature of the work, to distinguish a worker in one of the quarries which pock-marked the slopes of Cwm Taf Fechan from the labourer who fed the lime kilns of one of the 'improving' farmers in the Vale of Glamorgan. The affinity between these forms of gruelling out-door toil no doubt facilitated the growth of the iron industry, by enabling
the farm hand to enter industrial employment without having to acquire a radically new set of skills. It also underlines the extent to which even early industrial Merthyr remained locked in a seasonal rhythm, redolent of work on the land, although with a rather different distribution of tasks. Scouring followed its own, two-phase calendar. Summer months were spent building the embankments and digging the ditches needed to trap the autumn rains. It was in winter that the scouring floods were unleashed, shearing away hundreds of tons of mine for the furnaces.

The greater availability of mine in winter coincided with the onset of heightened activity right across the iron industry. The Taff and its tributaries were in spate, and the supply of power was thus assured, for notwithstanding the alacrity with which the ironmasters seized upon the enhanced facilities of steam-power, they remained heavily dependent upon water. Winter had its dangers in the sharp frosts and sudden floods, but it was summer drought that was the perennial block on a smooth run of production. Hence the assumption that a 'campaign' at the furnace could be of no more than forty weeks duration. Summer was an unwelcome respite from ironmaking, to be spent making repairs and improvements in preparedness for the resumption of full work in the autumn. Thus, extra
expenditure at Dowlais in August 1793 had been incurred, according to the works manager, by: 14

"making Bridges on the Limestone Rail Road and filling up large Hollows on the Line of the same, building Cots for the workmen paying for as much as 2000 Tons of Limestone for a Winter Stock makeing preparation for Scouring against Winter and in short doing everything I can this Summer".

The collieries responded to this seasonal variation in activity, although they did little themselves to influence its shape. Opencast methods were less prevalent in the winning of coal than of mine. Colliers had usually to follow the incline of the seam into the mountainside. Even so, this meant that collieries were almost invariably entered by levels driven horizontally into the hill. Vertical sinkings, with all their attendant costs of drainge and ventilation, were rare in this early period. Collieries were not, therefore, heavily capitalised, but they did require a more adept form of labour than mineworking.

Within the levels a variant of the 'pillar and stall' method was used to extract the coal. It was got by "narrow work", reported Gilbert Gilpin, as opposed to the "broad way" or 'longwall' method with which he was familiar with in Shropshire. 15 The "badness of the roof" at Merthyr precluded the removal of the coal in one
uninterrupted operation, the hallmark of longwall working. Instead of a team of colliers working along an extended coal-face, individual hewers were allotted stalls cut into the seam at right angles to the main heading. The stalls were separated by pillars of coal, some seven yards deep, which were left intact so as to allow the stall to be fully worked out with the minimum of timbering necessary to support the roof. Only when the stall was exhausted did the collier turn his attention to the pillar. Work on the seven yard thickness of coal began at the end of the stall furthest from the main heading. The coal pillar was carefully broken down, and with its removal the now unsupported roof was allowed to fall in. By edging slowly backwards toward the heading, and allowing debris to collapse into his erstwhile working-space, the collier was able to clear the maximum volume of coal available.

Overleaf - Gilbert Gilpin's sketch plan of a Merthyr coal level, showing the alternation of pillar and stall. "After all the coal in the spaces has been got, they begin at the end (a) of the pillars & bring the coal through the spaces (b) to the rail way (c) letting the roof fall in as they go on. They get the whole of the coal". (Source: SRO 1781/6/21, G. Gilpin to W. Wilkinson, 10 October 1796).
From the levels, patches and scouring fields the newly-dug coal and mine was carried to the furnace banks. On the bank raw materials were prepared for the furnace, according to a rhythm of work which was regular, even, and relentless. Here, raw coals were 'coked' in order to rid them of their sulphur impurities, an effect which was achieved by slow, air-starved combustion. The coals were loaded into ovens or heaped in beds, fired, and then smothered with earth. Having been left to smoulder for up to twenty-four hours, the smoking residue was raked out. Similarly, ironstone was 'polled' (cleaned of earth) and then charged into calcining kilns for a preparatory roasting. Blocks of limestone, fresh from the quarries, were laboriously broken down with hand hammers. The work was overseen by the bridgestocker, the contractor who was responsible for assembling the 'charge' of minerals that was to be fed into the furnace.

Coked coals, calcined mine, and unburnt limestone were broken into particles of a size which experience had taught would allow the furnace to fire at its best, and then mixed in set proportions. The 'charge' of shattered and roasted minerals, duly sorted by a young and predominantly female workforce, was delivered to the bridgehouse and into the custody of the furnace fillers. The filler then pushed the barrows of charge out across a
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gangway towards the open top of the stack, entered the swirl of smoke and rush of scorching gas that escaped from the throat of the furnace, and tipped the charge in. The process was repeated endlessly, night and day, replenishing the materials which were consumed in the roaring heart of the furnace.

At the foot of the furnace stack, some thirty to sixty feet below the bridgehouse, was the casthouse where the smelted iron was drained from the furnace. (To accommodate this arrangement, a furnace was usually built against a small cliff or an excavated hillside). On the furnace bank, work operations had been spatially extensive, (the kilns, ovens, and coking beds had been ranged at the rear of the bridgehouse), and conducted in the open air. At the foot of the stack, all the essential operations were completed within the confines of the casthouse. Activity pivoted about one event, the tapping of molten metal from the hearth of the furnace. Apart from the regular opening of the slag notch - from which scoria was allowed to flow, down a stone declivity, cooling, solidifying, and cracking into a fractured mass of cinder - work waited on that moment.

A tapping was usually made once every twelve hours. Its precise timing was in the hands of the furnace keeper, a
figure of immense authority who decided on the composition of the charge, the regulation of the blast, and a multiplicity of small adjustments and nudges that were needed to secure the best performance. While iron collected in the hearth, founders worked in the gloom of the casthouse, sculpting the sand-covered floor into an expanse of inter-connected troughs. At the crucial moment the clay plug that blocked the tap hole was punched away, and the liquid iron gushed into the 'main runner', the central channel which stretched the length of the casthouse. It then flowed into the 'sows', the secondary channels that branched off at right angles, and then the 'pigs' which sprouted from the sow like the teeth on a comb. The surge of metal was guided all the while by the team of founders, who struggled to control its flow and ensure that the grid of sows and pigs was evenly filled.

Once they had solidified, the pigs of cast iron were levered from their bed and the residual slag which adhered to them was struck off with a hand hammer. In this state, the metal had several possible destinations. The pigs might be sold to a distant foundry or forge for reworking elsewhere. Alternatively, the cast metal could be taken to moulding shops adjacent to the furnaces, there to be remelted and poured into moulds to produce a variety of castings - pipes, pots, fire-backs, wheels and basic
Varieties of Labour

machine parts. This was an environment little removed from the casthouse itself; a crowded space of choking smoke, grit, sand and liquid, spluttering metal. Indeed, in some older ironworks, such as Coalbrookdale, which specialised in castings, moulding was carried out in the casthouse with ladles of liquid iron filled straight from the furnace. But, in the modern, integrated works of Merthyr, the great bulk of cast pigs were reserved for conversion to wrought iron on site.

In the forge complex, the brittle, crystalline cast iron was refined, purged of its carbon impurities, and reshaped into fibrous, malleable bars of wrought iron. Bar iron was a far more versatile material which could be reworked into anything from a pin to an anchor. Its processing was also of a very different nature to the smelting of cast iron. The blast furnace encased a

Overleaf - Penydarren forge, built alongside the Morlais brook, as sketched by J.G. Wood in 1811. Further up the valley, half-obsured by a spur of high ground, is the blast furnace complex. Lengths of finished bar iron are stacked in front of the forge, ready for weighing. Note the tramways connecting the furnaces and the forge.
FENYDBARRN IRON WORKS

[Image: A print of a detailed etching of a industrial scene with various buildings, smokestacks, and people working.]
chemical transformation which - given that raw materials continued to fall into the top of the furnace - took on a relentless momentum of its own. The smelting of iron from its ore took place deep in the bowels of the furnace; it was necessarily hidden from view, and subject to human interference only at one or more removes. Conversely, the transformation from cast to wrought iron at the forge was a human process every bit as much as a chemical process. At every stage, the iron was subject to direct physical manipulation by the workman.

Nowhere was this more so than at the puddling furnace. These were low, rectangular brick structures, twelve feet or so in length, five to six feet from front to back, and about five in height. At one end of the furnace, the grate or fire-box was filled with coals. Flames and a current of atmospheric air from the fire-box were drawn over a ridge of fire-brick into the central portion of the furnace, the bowl, and the waste gases and smoke escaped through a tall flue at the far end of the furnace. The seat of chemical change was the furnace bowl, into which about five hundredweight of pig iron was loaded. Subjected to the flames the iron melted and the greater part of the carbon present would be oxidised in the flow of air.¹⁷
A single 'heat', lasting approximately an hour and a half, required the constant attention of the puddler and his underhand, and, at the critical time, the actual 'puddling' of the molten iron. This was a feat of herculean exertion in which the puddler, positioned at the open gate of the furnace, stirred the metal about with an iron bar, turning it over and around so as to ensure its even exposure to the oxidising agent. The task became progressively more arduous: as the carbon was burnt off, the melting point of the residual metal increased, and the puddled iron thickened and coagulated. In the parlance of the trade, it had 'come to nature'. To outsiders it was a stupendous sight:

"Athletic men, bathed in perspiration, naked from the waist upward, exposed to severe alternations of temperature, some, with long bars, stirring the fused metal through the door of the furnace, whose flaming concavity presented to view a glowing lake of fire - were working like Cyclopes. By continued and violent applications of strength, visible in writhing changes of attitude and contortions of the body, raking backwards and forwards, and stirring round the yielding metal, they contrived to weld together a shapeless mass gradually increasing in size till it became about one hundred pounds weight; this by the simultaneous effort of two men with massive tongs, was dragged out of the furnace, radiant with white heat..."

Close manual control over the 'balls' of decarburised iron that were plucked from the puddling furnaces remained a feature of the subsequent processing. The balls were dragged quickly over the stone-flagged floor of the forge
to be 'shingled' beneath a weighty helve hammer. It was the office of the shingler to turn the ball labouriously on the anvil while the liquid cinder contained within it was expelled under the impact of the hammer, and the iron shaped into a rectangular 'bloom' fit for rolling.

Each bloom was submitted to the heavy, grooved rolls between which it was compressed and elongated, so resulting in the production of a finished bar of wrought iron. Within the mill, large teams of men and youths were occupied in feeding iron through the 'puddle' rolls, and because of the preponderance of juvenile labour the report of the 1842 Royal Commission on the Employment of Children contained a long and detailed description of the rolling procedure:

"The roller now takes the iron, or bloom as it is called, and passes it through the largest hole in the roll, and then through the others successively, beginning with the largest and
ending with the smallest. The compressed bar, as it passes through each groove, is received by a youth [the catcher] on the other side, sometimes with a lever and sometimes with tongs, and handed over the rolls to the roller, who then proceeds to deliver it between each bar in succession; and, when the iron has passed through the last groove, it is in a state of what is called rough bar".

The rough bar, still glowing with heat, was then cut up into several shorter lengths at a pair of mechanically-powered shears. The pieces of rough bar were gathered up by pilers, ('who are of both sexes, but particularly girls'), and wheeled to the 'balling' or 'reheating' furnaces. The ball-furnaceman received the 'piles' (the six or eight lengths of iron that were to be reconsolidated into a new bloom):¹⁹

Overleaf - The spacious, open-sided interior of the lower rolling mill at Cyfarthfa, as depicted by Penry Williams in 1825. The mill appears to be in full operation, with rollers, catchers, and hookers-on passing the iron back and forth through the rolls. To the left, a ball-furnaceman sees to the re-heating of 'rough bar', while the pivoted door of his furnace is hauled up. In the foreground, pairs of rolls in various gauges stand idle, ready to be lifted into the roll-stocks if required.
"and places them in their separate lots in his furnace; from which, after a sufficient operation, they are handed over the rollers. A similar process is gone through as in the puddle rolls just described...and the iron, having gone through the given grooves in the rolls, the manufacture of bar iron is complete".

Indeed, apart from some minor finishing touches, such as the removal of surface blemishes under a light tilt hammer - planishing - or the cropping of rough ends, the bars were now ready for shipment.

* * *

The manufacture of iron in the massive, integrated Merthyr works drew together a wide diversity of separate processes and specialised functions. Each of these made specific demands on the workers who were dispersed about the works. However, there was one uniformity which engulfed all those who laboured in and around the furnace installations: namely, a vulnerability to accident and disease which made ironmaking one of the most hazardous of industrial activities in the eighteenth century.

An Aberdare surgeon made inadvertent allusion to the bleak record of the iron trade in matters of health and safety when advertising for an apprentice in 1809. He
emphasised, by way of an inducement, that "the situation is in the immediate neighbourhood of an Iron-Works, and consequently has the advantage of a very extensive practice". Presumably the irony was unintentional. Even so, it reflects the ever-present element of risk in the workplace at Merthyr.

Unfortunately, it is extremely difficult to gauge the dimensions of risk in the Merthyr works with any accuracy. Nowhere do systematic records of accidents at work survive. Newspaper coverage of accidents and inquests is not available until the foundation of the Merthyr Guardian in the 1830s. When the Swansea Cambrian did carry a report of the deaths of some Dowlais colliers in 1810, William Taitt could only believe that the information had been inserted at the prompting of Samuel Homfray in an malicious attempt to discredit the Company.

The manuscript remains of the iron companies give the strong impression that accidents were far from rare, but the evidence they provide is partial and imprecise. It is unlikely that incidents which did not result in fatalities or in a serious hindrance to production were brought to the attention of the ironmaster. Moreover, in bulletins to absentee proprietors, the on-site manager had every reason to filter out reports of mishaps which reflected
badly on his own competence. Richard Crawshay deplored the frequency of accidents at Cyfarthfa, but he deplored even more the incompleteness of the information that reached him in London. News of a "dreadful accident" in the Cyfarthfa foundry in 1788 came to him by way of Samuel Homfray:22

"I have generally heard of your misfortunes from Strangers who seldom fail to exaggerate— you had better part with reserve and adopt a contrary disposition towards Partners".

Similar complaints are to be found in the correspondence of William Taitt, another largely absentee proprietor.

Coroners were loathe to venture into the Hills. Dr. Richard Griffiths, who held the office from the 1780s, chafed at the "Numerous calls You have for me as Coroner".23 By 1806 he had had enough. "In future", he told Josiah John Guest, "upon any accidental death, unaccompanied by purpose violence, you need not take the trouble of writing... it will save you trouble and the County some expence".24 Those who succeeded him after his retirement in 1810 were no more sedulous. In 1814, a Merthyr correspondent could still ask the editor of the Cambrian why "there are no inquests held on people losing their lives by accidents, suicides, &c in this parish,
where (melancholy to relate) there are more deaths of that description than in any town in the Principality".25

If the evidence of inquests is missing, it can at least be said that the lacunae were occasioned by a belief that a proper attention to the duties of coroner would have been unduly onerous. That expectation is confirmed in the fragments of data which have survived. One quarter of the twenty-eight inquests listed by Griffiths in a bill of costs covering the period January 1790 to Easter 1791 were held at Merthyr.26 A further bill submitted to the clerk of the peace lists twenty inquests held between January and November 1797, of which six (30%) were at Merthyr.27 While these scraps of information can do no more than harden suspicions, it should be noted that even in this trifling sample the volume of accidents at Merthyr is under-registered, since victims were often interred without examination.28

If a systematic analysis of any validity is impossible, there are some speculative remarks to be made about fatalities. A recent investigation of industrial fatalities at Merthyr during the 1840s suggests that the collieries and mines were by far the most deadly areas of work. Of the 225 deaths that received the attention of the Merthyr Guardian in the course of that decade, the
occupation of the victim was given in over 90% of cases. Of these, nearly 86% were underground workers. No doubt the mines and collieries claimed a large proportion of the lives lost in the late eighteenth century as well. Gilbert Gilpin, who could draw on wide comparative experience, considered the roofs of the coal levels to be notably unsafe, and the atmosphere to be so poor that "they are under the necessity of sinking perpendicular pits to remedy the evil". Conceivably the underground workings were not responsible for quite the enormous proportion of deaths in this earlier period, in that the levels and pits would not have been driven so deep, and so the attendant problems of ventilation and roof support would have been less acute. But, in the absence of firm data, this must remain conjecture.

What is certain, though unquantifiable, is that injury was accepted as an inevitable part of ironmaking. One twentieth-century blast furnaceman has testified as to how hardly "a day goes by without minor accidents and by them I mean injuries which inflict pain without laying a man off work". Little has changed, for the 1842 Royal Commission reported that 'slight' accidents, "such as burns, cuts, and bruises, are numerous", so numerous that "they scarcely come under the notice of the surgeon". Such frictional injuries could hardly be avoided in an
environment so fraught with hazard as the ironworks, with its rivulets of molten metal, masses of burning coals, and boilers of scalding water. Constant alertness and concentration were needed if serious injury were to be evaded. Every blow of the helve hammer threatened the shingler with a splashing of liquid cinder. The thundering machinery of the rolling mill was just as deadly, and exacted a gruesome toll in crushed and mutilated limbs:

"About a year ago I lost my left arm above the elbow; I slipped my foot and fell down, and my arm got into the rolls. I was saved from going through them by being caught hold of by the men; my arm was crushed to pieces, and I was ten minutes in that state before they could stop the mill and raise the rolls".

This young roller did not consider his misfortune to be exceptional. In the four years he had worked at Dowlais forge he had seen "two men killed by the rolls and wheels, and two boys lost their left legs in the rolls and by the locomotive engine". It comes as no surprise to learn that in the 1840s, as the works approached the zenith of their prosperity, Merthyr was a town notorious "for its hideously deformed beggars and its crippled or blinded musicians".

Every class of work was cruelly demanding, and some, in the long run, as crippling as any accident. The nature of
the environment militated against robust good health. "The gaunt figures of the workmen...and the sallow countenances and miserable air of the people, prove it is labour very prejudicial to their health", noted one pessimistic, but prescient early observer.35 The respiratory diseases and cramped postures associated with coal mining received ample and well-merited exposure in later series of 'blue books'. Conditions in ironstone mines were less publicised, but mid-nineteenth-century investigators found the lot of the miner working underground to be worse than that of the collier. Only with respect to the lack of fire damp, and hence the diminished risk of explosion, could the miner feel himself more fortunate than the collier. Otherwise, beds of ironstone tended to be thinner than coal seams, the workings were correspondingly narrower, and the working faces inaccessible to draught animals, necessitating the use of human muscle-power in dragging out the dense raw mine. Mines were colder and wetter than the collieries, and the air still more foul.36

Conditions on the furnace bank, where the raw materials were processed amid a haze of smoke and fumes, could scarcely have been more conducive to the development of pulmonary disease. Cokers, limestone-breakers, and a host of other labourers earned their pay at batteries of
calcining kilns, coking beds, and ovens, all smouldering continually. The furnace filler's job took him to the very brink of the furnace, at the cost of smarting eyes and racked lungs, and no small measure of danger. Ironmaking may not have had the sulphurous toxicity of copper smelting, but the emissions from the blast furnace did include large measures of carbon monoxide. The consequences could be deadly for those who frequented the vicinity:

"a dreadful Circumstance occured this Morning old Edwd Maddy (who you know) his wife and an other old man found dead in their House under the Bridge House in the Old Furnace Suffocated as is Supposed (and without doubt it is so) by the Damp coming thro' the Air Holes of the Furnace into their House".

The work stations of the founders and forgemen were not only choked with smoke, they were also, of course, superheated. Iron melts at approximately 1400°C. When the furnace was tapped, a torrent of this white-hot liquid was discharged from the hearth, to follow a bubbling course within inches of the founders' feet:

"See them cast; you would think them in a bath and not a furnace; they bedew the burning sand with their streaming sweat, nor are their garments dried up by the fiery fires they attend or the fiery streams they manage".

The furnace or forge worker was easily distinguished by his distinctive appearance:
"The face of the fireman is often ghastly white, with a peculiar shining waxy texture; his eyes are sunken, and so tremendous and so unremitting is the heat he has to endure that he never shows the slightest particle of fat - his limbs are gaunt and thin, and his muscles dessicated and hard like wire".

The 'sons of Vulcan' may have appeared gaunt, but they could not be feeble. Even in the most skilled operations, the finest of judgements was allied to the application of brute strength. Crawshay admonished his managers: "to dispatch quantity of good Work at the Mill the most active and powerfull Men must be employ'd". At Dowlais Taitt was furious to discover that small boys were being hired as puddlers' underhands. They were quite inadequate to the job: "better the Furnaces stand idle than waste & Spoil the Iron".

It was assumed among ironworkers that only an early exposure to the ferocious heat of the forges could prepare a boy for 'fire-work'. "The countrymen who come here to work at the fires seldom can stand them for any length of time", announced Hopkin Jones, the master puddler at Dowlais Middle Forge in 1841, adding as a disdainful afterthought, "but they do for the colliery and mine-works". (Hence the common belief that recruitment to the iron trades drew primarily on inelastic resources, internal to the industry). Jones's own career was
testimony to the value of being acclimatised to the rigours of the forge at an early age. He had started work in 1799 when he was seven years old, stamping Richard Crawshay's trademark on the bars which were dragged, red-hot, from the rolls in Cyfarthfa mill.

However, the demands of ironmaking pressed hard on the bounds of endurance, even of men in their prime, inured to the heat. Puddling, the most elevated of iron crafts, was also the most punishing.43

"Some think the collier and miner have a trying and severe physical task in the bowels of the earth. That may be so; we are of opinion, however, that the physical power and endurance exercised by the puddler to make a heat of good iron is greater, and taxes the muscle and strength of the operator to a greater extent than the shingler, the roller, collier, or any other workman engaged in the coal and iron trades..."

The working life of a puddler was considered to be closing at the age of forty. Premature decrepitude was often accompanied by a blindness brought on by years of squinting into the coruscating white light of the furnace bowl. Puddling was outstandingly debilitating, but there were few jobs that did not hasten 'active and powerfull Men' towards a hunched and broken decline.
It is necessary to dwell on the scorched and wasted flesh, if only to dispel any nostalgia for the smell of "hot oil and steam from the engine, a wisp of coal smoke in one's nostrils; dust, heat, and the draughts on a winter's day", 44 that may be evoked by the memory of a now dead craft. There is a more immediate historiographical reason as well. If, in the following chapters, there is a discussion of work in terms of the identity, personal resilience, and communal esteem (if not the dignity), that the worker could derive from his labour, it is necessary to bear in mind the destructiveness that was always present.

* * *

The account of ironmaking given here has been somewhat skeletal, depicting only the bare bones of a rich and complex process. By focussing on the presiding deities at furnace and forge, the keeper and the puddler, the activity of many auxiliary workers is elided. There were, to mention just two of those who were occupied at the furnaces, the sand-carriers and cinderwheelers who carted materials to and from the casthouse. In the forge, the 'pull-up' boy held the pivoted door of the puddling furnace aloft while his master worked the metal.
Everywhere there were hauliers and labourers engaged in the portage of raw materials and semi-finished iron.

Moreover, by treating ironmaking as a sequential process, there are many dimensions of work that are omitted. There were, for example, the artisans who were responsible for the manufacture and upkeep of the tools and equipment necessary for the processing of iron - the smiths, millwrights, and moulders who practised a proto-engineering. Again, the construction of an ironworks was a colossal project, and the endless round of maintaining and adding to its fabric was enough in itself to give work to an army of brick-makers, stone-cutters, carpenters, and masons.

Further problems arise because the descriptions given above pay insufficient attention to the composition of the workforce - the distribution of young and old, male and female about the works. To describe the technical procedures that were adopted, say, to get at coal and mine, too often involves aggregating under the category of 'colliers' and 'miners' a workforce that was differentiated by function, age, and gender. Moreover, to provide a purely descriptive account enforces a static perspective. Firstly, because the foregoing pages have presented a picture of ironmaking based on the best
working practice in the last years of the eighteenth century, they must inevitably be silent as to long term shifts in the composition of the workforce. Yet there were unquestionably changes in the division of labour in the iron industry between the early eighteenth and mid-nineteenth centuries, and with them, functions which had been perceived as men's, passed to women or juveniles. Unfortunately, the details of these re-orderings of work are obscure and poorly documented.

There is a second way in which technical description proves too static to capture the reality of work at the furnaces. Descriptive accounts are organised around immobile categories which ignore the passage of the individual worker through time. They do not admit that the 'pull-up' boy hoped to become an underhand in his adolescence, and a puddler in his early manhood. Nor that when the man's physical powers had been spent, perhaps as early as his mid-thirties, he had to take on more menial tasks away from the fires. Such a working life cycle was laden with social signification, which is only accessible through a fuller understanding of a social context to work.

However, 'context' is not the most appropriate term. What has to be considered at Merthyr is not an inert backdrop
to the performance of work, but a set of practices which stood in a dynamic relationship to work. Production was made to work at Merthyr: the integration of so many disparate groups of men and women into a workforce of sufficient cohesion to enable a gigantic establishment such as Cyfarthfa to function was not the natural outcome of following a schedule of techniques. It rested on the interplay of particular lines of authority with certain solidary group loyalties. An explanation of how this eventuated will begin in the next chapter.
Endnotes to Chapter Three
The Varieties of Labour


2 G.W. Manby, A Historic and Picturesque Guide from Clifton, through the Counties of Monmouth, Glamorgan, and Brecknock (Bristol, 1802), p.190.


6 The classic account remains K.D. Klingender, Art and the Industrial Revolution (St. Albans, 1972), especially pp.72-90.


8 Malkin, Scenery, Antiquities, and Biography, p.169.


11 M. Atkinson & C. Baber, Growth and Decline, p.5.

12 GwRO D2.162 fo.35, RC to J. Cockshutt, 24 December 1788.

13 GwRO D2.162 fo.26, RC to J. Cockshutt, 10 September 1788.


15 SRO 1781/6/21, G. Gilpin to W. Wilkinson, 10 October 1796.


17 W.K.V. Gale, 'Wrought Iron: A Valediction', Transactions of the Newcomen Society, XXXVI (1963), pp.1-11, provides a detailed and atmospheric portrait of the puddling process. (When the puddling process was still at an experimental stage, in the last years of the eighteenth century, it was combined with elements of older forge techniques. For example, pigs of cast iron were given a preparatory heating in a
charcoal-fired hearth, the finery, to produce a semi-refined product, finer's metal).


19 BPP 1842 XVII, p.478.

20 *Cambrian*, 29 April 1809.

21 *Cambrian*, 14 April 1810; GRO D/D G 1810 T-W fo.197, W. Taitt to J.J. Guest, 14 April 1810.

22 GwRO D2.162 fo.8, RC to J. Cockshutt, 6 March 1788.

23 GRO D/D G 1796 C-V fo.9, R. Griffiths to R. Thompson, nd.

24 GRO D/D G 1806 A-T fo.43, R. Griffiths to J.J. Guest, 9 March 1806.

25 *Cambrian*, 2 April 1814.

26 GRO Q/SR 1791 B fo.142.

27 GRO Q/SR 1798 A fo.53.

28 For example, "direct the poor fellow to be buried it is not in my power to come up", R. Griffiths to T. Guest, nd, (GRO D/D G 1799 B-W fo.235).

30 SRO 1781/6/21, G. Gilpin to W. Wilkinson, 10 October 1796.


32 BPP 1842 XVII, p.583.

33 BPP 1842 XVII, p.641.

34 Strange, 'Accidents', p.61.


38 Quoted in Rule, Experience of Labour, p.81.


40 GwRO D2.162 fo.67, RC to J. Cockshutt, 6 July 1790.


42 BPP 1842 XVII, p.645.
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44 Gale, 'Wrought iron', p.11.

Yet doubts have long been expressed about the speed and finality with which the factory superseded older forms of production. And more recently, the alleged economic necessity of the factory has been queried, prompting historians to seek an ulterior rationale for its prevalence as an organisational form. These inquiries have centred on the possibilities which the 'factory' offered for an authoritative direction of the labour process; they have explored the relationship between the
Chapter Four

Modes of Management

In the last years of the eighteenth century, the Merthyr ironworks housed a technology of unsurpassed modernity. At the same time, a workforce of unexampled size milled about the furnace installations. The coincidence of the two encapsulates the 'Industrial Revolution' as it has been classically conceived - as the 'beginnings of the modern factory system', to quote the subtitle of Paul Mantoux's seminal *The Industrial Revolution in the Eighteenth Century* (1903).\(^1\) With its concentration of labour, its dependence on sophisticated, mechanised technique, and the sheer scale of its production, Merthyr could serve as an exemplar of the new economic order.

Yet doubts have long been expressed about the speed and finality with which the factory superceded older forms of production.\(^2\) And more recently, the alleged economic necessity of the factory has been queried, prompting historians to seek an ulterior rationale for its prevalence as an organisational form. These inquiries have centred on the possibilities which the 'factory' offered for an authoritarian direction of the labour process; they have explored the relationship between the

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deployment of technology and the exercise of authority in the workplace.

Discussion of the linkages between labour, technology, and organising authority in industry is a far from recent phenomenon. The linkages were already subject to critique in the first years of the nineteenth century, a critique which emanated from artisan trades which were even then threatened by mechanisation and a re-division of labour. To the self-confident claims of political economy was counterposed the communality of the 'trades', in a critical response of some power and sophistication. By the 1820s, such critiques were available in print, and they circulated widely through the milieu wherein Owenite cooperative schemes flowed into an older political radicalism. The struggle with mainstream political economy was, however, an unequal one, and the early critiques were submerged beneath orthodoxy.³

This area of criticism took on its modern form, as did so many others, with the work of Marx, who developed a powerful and compelling exposition of the relationship between labour, technology, and authority. Marx's concern was the 'critique of political economy', and since an inability to confront the coercive quality of capitalist development stood out, for him, as one of the most
blameworthy features of orthodox political economy, he was always alert to the exercise of 'despotism' within the workplace. Hence the theme of heightening capitalist power which runs through volume one of *Capital*.

It is to be hoped that a brief, exegetical commentary on the account of capitalist power provided by Marx can pinpoint those features of the eighteenth-century iron industry, as instanced at Merthyr, that are of pertinence to a discussion of work organisation and authority. However, the Marxist tradition, for all the diversity it has attained, does not stand alone. The labour-technology-authority triad has generated rival theorisations, some of them deeply sceptical of the radicalism of Marx's analysis. From one perspective, Marx was himself contaminated by his encounter with orthodox political economy, and had absorbed too many prejudicial elements from the ostensible object of his critique. The results are said to be visible in Marx's own conceptualization of capitalist development, in which the introduction of categories such as 'machinofacture' show Marx to have been overly impressed by the presumed dictates of technological necessity.

As a counterpoint to the Marxist canon, parenthetical reference to this strain of anti-Marxist radical analysis...
will be threaded through the account which follows. In particular, critical attention will be given to the influential essays in radical political economy of Stephen A. Marglin.6 As Marglin denies that large-scale, 'factory' production had the slightest technical or economic utility, a consideration of his texts will raise the question of whether there a 'natural' form of work organisation that flowed, unmediated, from the particular arrangement of techniques that was in use at Merthyr.

* * *

Marx was satisfied that while any act of collective labour requires conscious coordination, under the capitalist mode of production, the functions which accrue to the directing authority are not neutral, they are inescapably bound up with specific imperatives of capitalist production:7

"The control exercised by the capitalist is not only a special function arising from the nature of the social labour process...it is at the same time a function of the exploitation of a social labour process, and it is consequently conditioned by the unavoidable antagonism between the exploiter and the raw material of his exploitation".

This is to say, the rationale of capitalist domination is rooted in the form of surplus extraction that Marx saw as specific to capitalism as a mode of production. At
bottom, this uniqueness might be located in capitalism being a system of generalised commodity production, in which the primary producers are wage labourers. Now, this is, without doubt, an excessively abrupt summary, the very familiarity of which stands as an obstacle to understanding. It may be more useful to illuminate the historical novelty of capitalism by drawing comparisons with a different mode of production - feudalism. A schematic rendering of feudalism would isolate as its fundamental feature the existence of an exploited class (the peasantry) with some sort of access to the means of production (the land), from which a surplus was levied by means of extra-economic coercion. The surrender of surplus to an exploiting class was both stipulated in advance and visibly delivered, whether as actual surplus labour or in the form of rents, fines, and dues, thus obviating the need for a close supervision of the labour process.

For Marx, the problem of managerial control only arises with the growth of a directly economic form of surplus appropriation - with the expenditure of unpaid labour by wage labourers in the production of commodities, commodities which are alienated to the capitalist employer. The historic difficulty posed by commodity production is the blurring of the distinction between
necessary and surplus labour: the labour needed to reproduce the value of the wages disbursed to the worker, and the labour which generates a surplus for the capitalist are meshed together in a seemingly undifferentiated working day. The surplus extracted is entombed within commodities, and can only be realised by the sale of those commodities on the market. And uncertainty as to the magnitude of surplus was compounded by the competitively determined, and therefore escalating, standards of productive efficiency which characterise capitalism. Hence, the thrust toward a stringent regulation of work:

"where the capitalist mode of production prevails, anarchy in the social division of labour and despotism in the manufacturing division of labour mutually condition each other".

For Marx, capitalist domination of the labour process was grounded, in practice, in the ruthless extension of the division of labour. The splitting of tasks into finely graded functions had ramifications far beyond the formally 'economic': it was simultaneously a means of buttressing the power of the capitalist. Through the minute splintering of productive activity, the individual worker was divested of any control over the labour process as a whole. To comprehend this process historically, Marx proposed a two-phase schema for the development of
capitalist domination - a movement through the 'formal' to the 'real subsumption of labour to capital'. Formal subsumption, corresponding to the period of 'manufacture', denotes the invasion of an existing labour process by capitalist social relations. In this,\textsuperscript{11}

"work may become more intensive, its duration may be extended, it may become more continuous or orderly under the eye of the interested capitalist, but in themselves these changes do not effect the character of the actual labour process, the actual mode of working".

However, an increasingly detailed division of labour gives way to the real subsumption of labour to capital. Here, the decomposition of the old productive process is hastened by the application of science and technology, to mould a new and "specifically capitalist form of production", 'large scale industry', exemplified in the phenomenon of 'machinofacture'.

Divisions of labour, and their impact on 'knowledge' in the organisation of work, have also preoccupied modern theorists. In one influential intervention, S.A. Marglin has argued that the deepening division of labour within eighteenth-century industry owed little to supposed benefits in technical efficiency, but a great deal to the opportunities it gave capitalists to enjoy a parasitic existence at the expence of labour. More precisely, a
hierarchical form of organisation, based upon a complex
division of labour, meant that workers' knowledge of
productive techniques was divided according to the degree
of specialisation. It could only be reintegrated under
the direction of the boss, which allowed the capitalist to
award himself a position of unwarranted privilege in the
production process. Superficially, this is a position
that would seem akin to that proposed by Marx:¹²

"The possibility of an intelligent direction of
production expands in one direction, because it
vanishes in many others. What is lost by the
specialised workers is concentrated in the
capital which confronts them".

However, Marglin and Marx deduce the splintering of
knowledge in different ways. Marx, more deferential to
the progenitors of political economy, does assign an
objective basis to the division of labour. It proceeds
with a cumulative momentum, governed by a logical
progression - the 'iron law of proportionality': what
"begins as a spontaneous formation...attains a degree of
consistency and extension, [and] becomes the conscious,
methodical and systematic form of capitalist
production".¹³ But for Marglin, the division of labour in
the eighteenth-century workshop had no economic or
technical rationale whatsoever, nor the 'spontaneous'
basis which Marx imagined. Indeed, capitalist hierarchy
is the outcome of a conscious distortion of work
practices: the organisation of manufacture was fixed by institutional fiat (be it by a patent or factory architecture), not economic rationality. The sole object was to mask the real dispensability of the capitalist.

This is a challenging thesis, although it is not without flaws. Most seriously, by his insistence on the utter artificiality of the division of labour, characteristic of capitalist production, Marglin is unable to give any dynamic or direction to its development. He must depend on an ahistorical voluntarism in accounting for the emergence of new organisational forms, attributing great powers to the 'cognoscenti' (the possessors of organising ability). But he gives no clue as what constituted organising ability - a considerable weakness, since it is the sole defining characteristic of the 'cognoscente'. Nor is Marglin able to offer a satisfactory account of the rise of the 'cognoscenti', its preconditions or chronology. So, for example, he stresses the growing "social legitimacy of individualistic appropriation of knowledge" in the eighteenth century - this being an outcome of the prior degeneration of guild production from a 'linear' to a 'pyramidal' hierarchy. Yet there is no explanation of why, then, 'cognoscenti' were clustered in the eighteenth rather than the sixteenth century. Moreover, by citing the decay of guild production, Marglin
would seem to concede that a pyramidal hierarchy could emerge 'spontaneously'.

If Marglin's thesis is not wholly satisfactory, it does have the very great merit of fostering a suspicion of every working arrangement, however 'natural' or blameless it may appear. Although Marx's view of technology and the capitalist enterprise is far from benign or complacent, Marglin's insistence that there is no automatic configuration of 'hands', tools, and materials, which can be 'read' straight from a given technique of production, is salutary. He usefully serves notice that rules fixing the performance of work have first to be constructed. Although Marglin treats this process as a 'once-and-for-all' deception, his distrustful approach can be of use in tracing the emergence of workshop practice at Merthyr as a continual, never-completed process. In the ironworks, schemes of work organisation were not imposed regardless of circumstance. They were developed in response to changes in the availability of labour, and in the nature and availability of technology. They had also to accommodate existing workplace practices, which had an acquired legitimacy and which were often resistant to disruption.15
Although Marx reverses Marglin's emphasis on the subjective origins of workplace authority, his 'objectivism' is not determinist. Locating the basis of capitalist authority in social relations, rather than the technology of production, Marx is able to envisage the possibility of resistance - a prospect which Marglin, at least in his early work, appears to have written off.

In Capital, workers' resistance to the dominance of capital is readily attested, most notably with respect to the 'struggle for a normal working day'. Full attention is paid to the determinate influence of class struggle in the shaping of the productive process: the 'normal working day', Marx proclaims, is no more than the "product of a protracted and more or less concealed civil war between the capitalist class and the working class".

Yet, in the detailed account of the factory acts which Marx uses to illustrate his contention, the terms of reference remain global: the combatants are entire classes, ranging over a battlefield that is national, if not international in its scope; the outcome is enshrined in legislation. There is, beyond this sweeping exposition, space for finer-grained, locally-focussed analyses of the pursuit of authority within the workshop. With the Merthyr ironworks, there is the opportunity of pursuing the ways and means of that process in close
empirical detail, while at the same time, preserving a theoretically-based sensitivity to the several constraints governing the course of production.

Finally, it should be added that the Merthyr works provide a control for the use, and mis-use, of some of Marx's categories. The ironworks were the apogee of capitalist development for their time, and so, it might be assumed, the scene of the 'real subsumption of labour', where capital held untrammeled sway. However, this association depends on a corresponding assumption: that 'formal subsumption' may be equated with an inability on the part of the capitalist to make any infringement of substance upon the conduct of labour. All too often, this can lead to the term carrying implications of harmony, or its erroneous identification with a relaxed regime within the 'pre-industrial' workshop, where workers could display an easy defiance to their master.

This is to employ 'formal' and 'real' subsumption as descriptive labels, and not as the analytical categories with which Marx denotes the speed and efficiency with which capital undergoes valorization. In sum, it is not necessary to endorse the linearity with which these instruments are sometimes used. Certainly, they need not describe a linear deterioration of working experience. In
itself, real subsumption need not be viewed as enforcing a qualitatively harsher work regime from the perspective of the worker. It should be recalled that many trades which were the scene of formal subsumption, where production continued in small, technologically stagnant, 'sweated' units, were associated with degradation and immiseration.¹⁹

At the same time, the situation of the eighteenth-century iron trade as an instance of 'large scale industry' unquestionably promoted an attention to problems of labour management. Indeed, management developed at an unusually early stage in the iron industry, and, as a result, it can provide a useful sidelight on the validity of the theoretical approaches which have been discussed here.

Ever since direct reduction techniques were rendered obsolete by the blast furnace in the sixteenth century, iron smelting had been conducted on a relatively extended scale, dependent on heavy capital inputs, and exploiting wage labour. These conditions were highly conducive to the growth of a specialised supervisory layer. The high capital threshold excluded anyone who could not not boast of a considerable prior accumulation. By the early eighteenth century, this threshold had escalated to new heights. The English iron industry was dominated by great
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regional partnerships, which had amalgamated to offset the effects of competition, both foreign and domestic. The Foley partnership, for example, the mightiest of these, had been established in 1692 with a capital of £39,000. The five partners controlled no fewer than fourteen ironworks, divided between the Forest of Dean and the Stour valley. Clearly, regular supervision by the proprietors was out of the question.

It was also the case that many of those who invested in iron were unlikely to evince any enthusiasm for taking on the burden of management. They would already be involved in successful business ventures outside the iron industry, and had no compelling reason to regard geographically distant furnaces as a commercial priority. Samuel Bowyer, a member of the Dowlais Company in the 1770s and 1780s, was a London-based entrepreneur with an interest in the Exchequer Office. When he sold his shares in the Company in 1785, it was for "no other reason than...that of not having my Sons Involved in too many concerns".

Indeed, in the first years of its existence the Dowlais Company exemplified the fracture between active management and a dispersed body of proprietors. Four of the original shareholders in the Company were from Bristol. One of them claimed to have visited the site only once, and that
for a mere two or three hours. He was not so atypical. The inspections of another major shareholder were separated by years, while a London factor who entered the partnership in 1771 confessed to being "ignorant of the Nature of such Trade and the proper Management thereof". It was the frequent inability or disinclination of iron capitalists to direct production personally which necessitated the emergence of professional management at an early date. Thus, districts such as Furness, and then Shropshire, which could, by the late eighteenth century, boast a hundred years or more of intensive experience in mineral and metal working, were reservoirs of managerial expertise from which the newer iron industry of South Wales could draw. Not a few of the managerial staff at Merthyr c.1800 could claim forbears who had been active in the iron districts of western Britain over several generations. Indeed, such are the instances of familial continuity, that it is some of the managerial clans that should be spoken of as iron 'dynasties', not the ironmasters.

Thomas Gilpin, who kept the books at Penydarren in the mid-1790s, belonged to one of the most notable managerial families of the eighteenth-century iron industry. His father was Mark Gilpin (d.1804), for many years the chief
clerk at Coalbrookdale, but by birth a Westmorland man. In his native region, the various branches of the Gilpin family had long been engaged in industrial affairs. Gilpins were serving as stewards to the Lowthers, the great coal magnates of Cumberland, as early as the 1690s. Another Gilpin, Benjamin, accompanied the ironmaster Isaac Wilkinson - later to be a pioneer of the Merthyr iron industry - from Cumberland to the new Bersham furnace in Denbighshire in the 1750s. Benjamin's son, Gilbert Gilpin, born at Bersham in 1766, was in his turn the chief clerk to Isaac Wilkinson's sons.

As the aide to John and William Wilkinson when their iron empire was at its most far flung and prosperous, Gilbert Gilpin was one of the most prominent industrial 'clerks' of his day. He had an intimate knowledge of ironmaking and markets, and he was alert to each new shift in technique. After leaving the service of John Wilkinson in the mid-1790s, amid much acrimony, he investigated the booming ironworks of South Wales, joining William Barrow of the Sirhowy works in some desultory ventures. In 1799, however, he returned to Shropshire to take on the management of the Old Park ironworks, which he revamped on the lines of the new works he had observed so attentively at Merthyr and the adjoining valleys.
The Gilpins have been well-chronicled, thanks mainly to their connection with the mighty Wilkinsons. The same cannot be said of the Wood family, despite their lengthy involvement in the iron industry and their well-documented activities in Merthyr. To be more accurate, it is only the founder of the family's fortunes who has been accorded historical attention. This was none other than William Wood (1671-1730), the Wolverhampton ironfounder, whose contract for Irish coinage so enraged Swift. And the 'Irish ha' pence' was by no means the greatest of his speculations. For most of the 1720s he sought to aggrandise the entire English iron industry through an audacious joint stock flotation of one million pounds sterling.

Whether through genuine metallurgical expertise, or, as seems more likely, connections with the free-booting Whig regime which held power under George I, the first William Wood managed to accumulate a considerable property in foundries, forges, and collieries, scattered from London, via Staffordshire, to Cumberland. On his death in 1730, the estate was broken up amongst his sons, with the fourth son, Charles Wood (1702-74), taking the lease to the Distington ironworks near Whitehaven. Unhappily, William Wood's million pound flotation had been utterly fraudulent, and soon after his demise financial nemesis
overtook his three executors, one of whom was Charles Wood, gazetted bankrupt in 1733.

Ruined in this way, Charles Wood was forced to fall back on his undoubted abilities as a technician. During the 1740s and 1750s he worked extensively at forges in Cumberland, where he devised and later patented new techniques of refining cast iron. Then, following his marriage to Jemima Lyndon, the widowed sister of William Brownrigg of Whitehaven, he moved to Merthyr in 1766. At the behest of his new brother-in-law, who had recently taken out a series of mineral leases in the area in partnership with Anthony Bacon, Charles Wood brought a team of workmen from Cumbria to build the furnace and forge at Cyfarthfa. He remained as agent at the new Cyfarthfa works until his death in 1774.29

His son, another William Wood, was a clerk at Cyfarthfa before switching his allegiance to Penydarren in the early 1790s, and then taking on the management of the Dowlais Company's yard and mill at Cardiff in 1805. Charles Wood's step-son, George Lyndon, followed the same course, moving from Cyfarthfa to Penydarren, and then into the service of the Dowlais Company.30 These two half-brothers both had sons who followed them into the iron trade. George Brownrigg Lyndon (b.1799) was employed at Dowlais
by 1815, although it is not clear in what capacity. The career of his cousin, William Wood II, can be traced in greater detail. Born at Merthyr in 1793, he was bound to the Dowlais Company in 1811 and set to learn colliery management and surveying under the Company's principal mineral agent. He then understudied his father at the Dowlais wharf in Cardiff, and, in 1817, served a brief term as the Dowlais nominee to the Merthyr Tramroad Company, before returning to the Dowlais works as agent.31

Significantly, it was this William Wood, with his unmatched managerial pedigree, who was recruited in 1825 by the British Iron Company, the first joint-stock speculation in the iron industry following the repeal of the Bubble Act in 1825. The BIC was a massive venture encompassing sites in Glamorgan, Monmouthshire, Denbighshire and Staffordshire, with a capital of £1.6 million. It was fitting that it should have been Wood, a true heir to the industry's managerial tradition, who was connected with the first enterprise to break consciously with the conception of the ironmaster as the all-powerful incarnation of combined ownership and control.32

It is then possible to speak of managerial dynasties, but it should not be thought that managerial status had the rigidity of a caste. There were opportunities for
managers to become iron capitalists in their own right, as
Gilbert Gilpin proved by ending his career as the
proprietor of an important chain manufactory at Coalport,
on the Severn. Of course, the obstacles were manifold.
There were few managers who could surmount the formidable
capital threshold on their own account, and monied
investors in London and Bristol were more likely to join
with established ironmasters of proven reputation. And as
mineral estates in the Hills were carved out by lavishly
funded partnerships, erstwhile agents seeking an entry
into the trade were at a disadvantage. The 'clerks' and
'agents' at a South Wales ironworks could command only
modest sums. Still, these could be profitably sunk in the
sale-coal collieries of Monmouthshire, or invested in
coastal shipping.

When a manager did make the transition from agent to
entrepreneur, it was normally through absorption into the
partnership which had hired him. This had the plain
advantage for the existing partners of allying the self-
interest of the manager to the performance of the concern
in the most direct way. The arrangement was a commonplace
in the trade. Robert Thompson was assigned a one-
sixteenth share in the Dowlais Company soon after taking
the post of agent in 1792. At Cyfarthfa in the 1790s,
Richard Crawshay allowed the "person who inspects the
machinery [the renowned engineer Watkin George] one eighth of the profits to keep them in repair". Admission to the charmed circle of proprietors was, however, provisional. Watkin George's stake in the firm of Crawshay & George was largely nominal, and did not survive his departure from Cyfarthfa in the early 1800s. Similarly, when Thompson's seven-year contract at Dowlais was not renewed, he was unceremoniously pressurised to surrender his share before taking on a new position at the Tintern forge:

"it would be excessively unpleasant to the Partners at Dowlais Works to have a person connected with them who was at the same time more largely interested in another Concern of the same kind".

* * *

However, there were those who, with application and good fortune, graduated to be fully fledged ironmasters. Richard Hill of Plymouth was a case in point. He had been brought to Merthyr by Anthony Bacon to be the agent at Cyfarthfa. Hill was, like his master, a Cumbrian, with some property in Westmorland. His opportunity came in 1786 with the death of Bacon, all of whose natural children were in their infancy. Bacon's estate was put
under the administration of the Court of Chancery, from which Hill was able to lease Plymouth furnace and set up on his own account.39

The Guest family could not match the abruptness of Richard Hill's translation from agent to ironmaster. Yet the Guest ascendancy at Dowlais, although uneven and stretched over several decades, was eventually all the more emphatic: for when Josiah John Guest finally assumed sole ownership of the Company in 1850, it comprised the greatest ironworks on earth. The Guests take on an additional importance in that they provide detailed confirmation of the prevalence of kinship links in the managerial stratum.

John Guest of Broseley was appointed works manager at Dowlais for a fourteen-year term in 1767, when a "proper and Skilful" candidate could not be found in the ranks of the partnership.40 Guest took on the entire works on subcontract, agreeing to cast a minimum of 700 tons of pig iron per annum, which he would sell to the individual Dowlais partners according to a pre-determined price schedule. When his tenure was renewed in 1782, he bought shares in the Company. These, and the stewardship of the works, continued in the family. His son Thomas was manager from 1787 to 1792, and again from 1799 until his
death in 1807. Thomas Guest was succeeded, in his turn, by his son, Josiah John, who remained at the head of the concern until his death in 1852.

The senior Guests were aided by an extensive cousinage which had followed John Guest from Shropshire. Two of his younger brothers - Thomas (b.1729) and Robert (b.1738) - worked and died at Dowlais. By the first decade of the nineteenth century, their sons held key positions at the works: Cornelius Guest as a master forgeman, George Guest as the overseer of the furnace yard. John Guest also recruited his brother-in-law, Peter Onions (1719/20-1798), a technician and metalworker of the highest repute, who had devised a coal-fired method of refining cast iron in advance of Henry Cort. His son, William Onions, chose to work at Cyfarthfa, but other members of the family, (such as the brothers Daniel and Henry Onions), served at Dowlais.41

The advantage of such a dispersal of kinsmen about the works was clear: familial solidarity could act as a safeguard against fraud and embezzlement. There can be no doubt that this rudimentary form of insurance was highly prized. In 1806, when Thomas Guest's declining health brought the threat of a managerial hiatus, Taitt advocated the immediate promotion of his young nephew Alexander
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Kirkwood, and Guest's twenty-year-old son, Josiah, to positions of the gravest responsibility - "so that we may not be plunder'd".42 Not that the claims of consanguinity were absolute. Indeed, a diaspora of Guests and Onions spread across South Wales. Daniel Onions left Dowlais for the Varteg works in Monmouthshire c.1800, and his brother Henry departed for Staffordshire c.1810.43 The perfidious Cornelius Guest went so far as to engage with the arch-rival Homfrays for a period. Even so, when allowance has been made for such inconstancy, the prevalence of blood relationships in the works hierarchy remains striking.

The same reliance, albeit imperfect, on family loyalty was not feasible at Cyfarthfa. Richard Crawshay was a first-generation ironmaster, without a cohort of cousins to staff his forges. Instead, he resorted to exhorting a thorough-going and self-conscious professionalism from his managers. A receptivity to innovation was expected, in which the terms of reference were national, if not international. As early as 1789, Crawshay lamented that "Journeys to the best regulated Works in the Kingdom have hitherto not inspired our Managers with that Emulation they have always promised".44 As they proved unable to assimilate the experience with sufficient speed, he arranged for a stream of English and Scottish ironmasters and technicians to make the reverse trip and advise on
policy at Cyfarthfa.\textsuperscript{45} Crawshay set a premium on technological contemporaneity, but as a necessary, rather than sufficient element in his managerial strategy. He found the 'mechanical' turn of mind of James Cockshutt, his chief manager in the 1780s, to be "very usefull as far as it goes", but otherwise he suffered from a:\textsuperscript{46}

"want of System in visiting to effect the Mining branch & the Smelting Furnaces & lastly keeping the other Setts of Workmen to performance of yield & quantity of Labour subject to produce the quantity of well-finish'd Iron for Creation of Profitt adequate to the Sum we have advanced".

For an insistence on order and regularity as the precondition of productivity, this statement could hardly be bettered. It was a constant refrain in Crawshay's correspondence. In "well regulated Works", he exclaimed, "Subordination and Industry are seen very visibly good Rules laid down & steady adherence to 'em".\textsuperscript{47} Crawshay's forthrightness and fondness for militaristic imagery ("officers & Men") were remarkable, even in an industry which abounded in martinets. In fact, his practice might aptly be described as regimentation. It was this that aided him in overcoming the difficulties posed by the absence of kinship networks. It also granted him a certain flexibility in the rejigging of management structures. His relationship to his officers was ruthlessly contractual, and when they erred they could
expect no sympathy. The freedom of movement which Crawshay enjoyed was demonstrated to striking effect in 1791 when he instituted a wide-ranging purge of managerial staff: James Cockshutt, Robert Thompson, William Wood senior and George Lyndon were all ejected. Crawshay took personal control of the Cyfarthfa works, with Watkin George as his technical adjutant.

Dowlais and Cyfarthfa may stand for opposite poles of managerial practice. The distinctions were real and important. They were not, however, absolute. The differences that existed should not be corralled artificially into 'modern' and 'traditional' camps. Even Crawshay shared the general conservatism whereby the "first industrial nation failed to develop a distinctive managerial ethos or ethic".48 His disciplinary zeal was not effected via an impersonal bureaucracy; his dictates all bore the imprint of his titanic ego. When he boasted of being "as much in Command as at any work I have seen[,] its by Constant Attention & Discipline"49, he alluded to an attentiveness that was personal rather than institutional. Far from neglecting the bravura which was commonly deployed by the great industrialists of the eighteenth century, Crawshay sedulously cultivated a persona in which the requisite qualities of potency and solicitude were blended. His presence, his force of
personality remained of inestimable importance in establishing a tone of order and regularity at Cyfarthfa.50

Conversely, where Crawshay did break new ground the other Merthyr ironmasters followed. In the case of the recruitment of managers, the ironmasters' dependence on kin and neighbours had been manifested in the preponderance of Cumbrians and Shropshiremen at Merthyr, although the managerial resources of the Forest of Dean, only thirty-five miles to the east, were left untapped. Crawshay was the first to recruit on a truly national scale, driven by both inclination and necessity to do so, but other ironmasters came to follow suit. Faced by the massive growth of Merthyr's iron industry, they found the circles from which they had been accustomed to draw their supervisory staff to be too inelastic.51 Thus, the Dowlais Company resorted to newspaper advertisement in its search for a new furnace manager in 1813; applications were invited from the readers of the gazettes in Birmingham, Stourbridge and Wolverhampton.52
The preceding remarks have concerned the managerial elite at Merthyr, the surrogate capitalists who were entrusted with the overall running of an ironworks — those designated as 'managers', 'agents', or, in a rather older usage, as 'clerks'. The absence of a fixed terminology within the trade is paradoxical, given that 'management' was an established function within the iron industry. Yet despite the confusion of nomenclature, there are clear signs that the value assigned to managers was increasing. This was indicated by the rising level of salaries, wartime inflation notwithstanding. Robert Thompson had received £80 plus board for performing the duties of bookkeeper at Cyfarthfa. When he took on the management of Dowlais in 1792 he had "£150 p. annum & the land belonging to the work, which keeps 3 or 4 horses & as many cows". This would seem to have been typical for the time, given that Jeremiah Homfray's salary as the manager at Penydarren had been fixed at £140 p.a. by arbitrators in the previous year. Yet by 1814 Josiah John Guest was in receipt of a £400 salary as the sole manager at Dowlais.

Men such as Thompson or Josiah Guest headed the industrial hierarchy. They were charged with coordinating a productive process of great complexity. Yet they exhibited no intimate engagement with that productive process. In this sense, 'clerk' was not an inappropriate
designations. They were involved in a continuous audit of materials as these were moved between the different departments of the works. The 'clerks' set the process of production in motion, but they did not essay a detailed supervision. For that, the ironmaster/manager depended on a permanent staff of skilled workmen who acted as his adjutants.

Characteristically, these men were not ironworkers. They were usually smiths, masons, or carpenters who were not involved in the direct production of iron as such, but who did deploy skills which were critical for the upkeep and repair of the tools and machinery on which the success of production rested. Evan Evans, alias 'Yanto', played such a role at Dowlais for over twenty years. Formally a mason, he operated as an effective major-domo to successive works managers.

The carpenter William Richards was another Dowlais notable. Having worked for the Company since the early 1790s, he was hired to superintend his fellow carpenters in 1799, for eighteen shillings a week, plus house and firing, with a five guinea bonus at the end of every year. His emolument soon increased, for "there is not a Man now at the Works who can make a patern or do any Job we want—he is a good Workman & must not be treated as one of
The distinguishing feature of this layer was not in itself the possession of rare strains of expertise. The Merthyr works were, after all, densely populated with men of recondite skills. Rather, they were all-purpose 'fixers' whose activity was centred on emergencies, construction jobs, and one-off amendments to plant. These tasks took them from one end of the ironworks to the other, and thus lent them a uniquely compendious acquaintance with different workmen and their individual capabilities. It was the breadth of their knowledge in this respect which recommended a Yanto or William Richards to the ironmaster, and explains the great reliance placed on them for hiring and firing. But their power, although considerable, was not essentially concerned with making an insistent, prescriptive supervision of the performance of labour.
Much the same could be said of an analogous grouping, the colliery and mine agents.

The early mineral agents in Merthyr were specially recruited immigrants from the older English coalfields, where colliery management had already evolved into a recognisable specialism. 'True bred' colliers like James Tranter of Broseley had carried the accumulated knowledge of Shropshire to Merthyr with John Guest. His son, another James, born at Dowlais in 1776, succeeded him as a colliery agent for the Company. Among the colleagues of the younger James Tranter at Dowlais in the 1800s was George Kirkhouse, the grandson of a Gateshead coal viewer who had been brought to South Wales in the mid-eighteenth century. (George's brother, Henry Kirkhouse, was mineral agent at Cyfarthfa). These were men of some consequence, whose services could, by the early nineteenth century, command salaries of up to one hundred guineas, together with the usual perquisites of accommodation and fuel. By 1807, James Tranter held two farms totalling over 200 acres in the south of the parish. Harry Head, who came from Tredegar to manage the "Coal Mine Limestone &c business" at Dowlais in 1803, was a partner in the Cwm Dows colliery near Blackwood, Monmouthshire, together with Richard Branthwaite, the ironmaster of Sirhowy. Head was, like his employer William Taitt, a member of the
'Sympathetic Society' of Cardiff, the statutes of which barred from admittance anyone "beneath the Degree of a reputable Tradesman".65

Despite his technical accomplishment, or rather because of it, the mineral agent was not an overseer of production. His activity was nomadic, moving between scattered mining operations. Again, highly prized skills were deployed selectively. The mineral agent's business was in dealing with exceptional circumstances - with the opening of new workings, with intractable problems of drainage or ventilation, or in periodic checks on the standards of maintenance within the levels. In short, they laid down certain parameters within which the extraction of minerals went ahead, but they did not intervene continuously to dictate the pace or the detail of work.66

In this, mineral agents typified managerial practice at the Merthyr ironworks. The heavy capital costs of the technological package upon which the iron trade had long depended, had nurtured a strong managerial tradition. Yet it was a tradition which failed to depart significantly from accustomed paths, even when the industry entered a period of unprecedented change in the last quarter of the eighteenth century. In part, this was a tribute to its flexibility. It also signified that the success of
management in the iron trade rested on its conjunction with a technology which, for all its modernity, was peculiarly dependent upon the mediation of skilled human labour. The enforcement of capitalist authority was no automatic process, nor was it achieved through the manipulation of iron-making technology. It rested upon an active, and rarely easy, relationship between managerial direction and a 'culture of skill' which governed the performance of work in the forges and casthouses. It is this relation which now requires scrutiny.


4 The bounds of this discussion could be widened almost endlessly, and thus the 'right focus', adopted, has accommodated the exclusion of several important theoretical perspectives. Little direct attention has been given to the extensive post-Braverman 'labour process' debates. This is because most contributors have concentrated on the late nineteenth and early twentieth centuries, and have not infrequently invoked Weberian notions of 'bureaucratization' which are manifestly inapplicable to late eighteenth-century Northwales. Bizarrely, there has been no attempt to tackle the massively influential work of Michel Prodan, despite occasional statements to the effect...
Endnotes to Chapter Four

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2 Interestingly recast in terms of 'combined and uneven development' in R. Samuel, 'Workshop of the World: Steam Power and Hand Technology in mid-Victorian Britain', History Workshop, 3 (Spring 1977), pp.6-72.


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that it was capitalism that "gave rise to the specific modality of disciplinary power", [M. Foucault, Discipline and Punish: The Birth of the Prison (Harmondsworth, 1977), p.221], it is clear that his general thesis is precisely the reverse.

5 For example: "The image of the industrial hierarchy [in Capital] involves a strategic project, not a descriptive truth, it does not seek to correspond to reality, it seeks to make reality correspond to it by reducing to infinity workers' resistance" - Andre Glucksman, quoted in Callinicos, Is There a Future for Marxism?, p.154. From an opposing direction E.P. Thompson has also suggested that Marx became 'imprisoned' within political economy. See Thompson, Poverty of Theory, p. 163.


Marx ruled out any similar dynamic of growth operating within feudalism: "in any economic formation of society where the use-value rather than the exchange-value of the product predominates, surplus labour will be restricted by a more or less confined set of needs, and...no boundless thirst for surplus labour will arise from the character of production itself". Capital, p.345. However, there is a longstanding debate as to the nature - or the existence - of a specific feudal dynamic. See M. Dobb, Studies in the Development of Capitalism (rev. edn., 1963), and the responses to his theses, first made in the 1950s and collected in R. Hilton ed. The Transition from Feudalism to Capitalism (1976). The same themes have been revived more recently in T.H. Aston & C.H.E. Philpin eds. The Brenner Debate: Agrarian Class Structure and Economic Development in Pre-industrial Europe (Cambridge, 1985).

10 Marx, Capital, p.477.

11 Marx, Capital, p.1021.

12 Marx, Capital, p.482.

13 Marx, Capital, p.485.

14 J.S. Cohen, 'Managers and Machinery: An Analysis of the Rise of Factory Production', Australian Economic Papers, XX, 36 (1981), pp.24-41, attempts to overcome this problem. He seems to argue that an initial transfer to factory production was based on the sort of subjective factors emphasised by Marglin. But thereafter "machine tending technology...increased labour productivity especially within the factory and thus enhanced the profitability of factories relative
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to other forms of production...thus accelerat[ing] the spread of this form of organization", (p.37). Unfortunately, the argument is impenetrably phrased.


16 Marx, Capital, pp.450-1: "It is not because he is a leader of industry that a man is a capitalist; on the contrary, he is a leader of industry because he is a capitalist. The leadership of industry is an attribute of capital, just as in feudal times the functions of general and judge were attributes of landed property".

17 Marglin has recently acknowledged the "persistence of struggle between bosses and workers...[and] the continuing focus of this struggle on work organisation and access to knowledge". Marglin, 'Knowledge and Power', p.156.


21 GloRO D1086/F116, S. Bowyer to J. Blagden Hale, 23 November 1785.

22 PRO C 12/1059/31; PRO E 112/2096/128.


26 Trinder, Shropshire, p.121.

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29 Mott, Henry Cort, p.7. NLW Merthyr Tydfil Parish Register, 1763-99 fo.16, records the burial of Charles Wood 'agent of Cyfarthfa' on 17 October 1774.

30 These sketches of Charles Wood's descendants in the Merthyr iron industry have been pieced together from manuscript fragments of which the most important are: GRO D/D G outletters 1782-94 fo.91, W. Taitt to W. Wood, 18 March 1784; SRO 1781/6/21, G. Gilpin to W. Wilkinson, 10 October 1796; GRO D/D G 1805 T-W fos.532-38; D/D G 1792 C-T fo.78, G. Lyndon to R. Thompson, 12 October 1792; D/D G 1807 A-W fo.386, W. Taitt to T. Guest, 8 February 1807; D/D G 1809 J-W fos.198-99. See also the opening chapter of M. Howitt, An Autobiography (1889), I, pp.1-28.


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trade, was the Company's secretary, and David Mushet, the pioneer of ferrous metallurgy, was the first manager of the Company's Abersychan works in Monmouthshire; see Atkinson & Baber, Growth and Decline, pp.59-61. William Wood was the first manager at the Acrefair site in Denbighshire before transferring to Abersychan in 1836. See his evidence to the sub-commissioners on children's employment in 1841, BPP 1842 XVII, p.601.

33 Trinder, Shropshire, p.131.

34 The situation was rather different in Staffordshire where, instead of the enormous tracts in which South Wales was characteristically leased out, "landed property is very much divided; and, naturally, all the proprietors desireous of turning their coal and iron mines to immediate account. Hence there is a colliery in almost every field. As there is not sale for such an immense quantity of coal and ironstone, several of those little proprietors unite together and build furnaces; clerks from the neighbouring manufactories are taken in as partners to direct the concerns; the tradesmen of the towns in the vicinity who can raise a hundred or two hundred pounds, form part of the firm; and it is in this way that the ironworks have multiplied in that county". Elsas, p.7, G. Gilpin to J. Wise, 3 October 1819.

35 George Lyndon and William Wood senior owned a couple of sloops which worked the Cardiff-Bristol passage, (Cambrian, 29 August 1807); Robert Ward, book-keeper and then agent at Penydarren between 1801 and 1815, held a quarter share in a brig which also sailed out of Cardiff, (GRO D/D G 1817 (1) P-W fo.266, R. Ward to J.J. Guest, 20 July 1817).
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36 Cambrian Directory (Salisbury, 1800), p.22. Compare Gilbert Gilpin's expectations in 1797: "If the Ruabon Co. would let me have a 16th in the Works as well as be their agent at the salary mentioned, it would still be my best plan." SRO 1781/6/24, G. Gilpin to W. Wilkinson, 10 February 1797, quoted in I. Edwards, 'Gilbert Gilpin', p.91.


38 NLW 15334E, R. Hill to A. Harrison, 1 January 1787, (loose leaf inserted between fos.99 & 100).

39 NLW Maybery 86, lease dated 9 May 1788.

40 PRO C 12/1059/31.


44 GwRO D2.162 fo.52, 'Memorandum for W[illiam] C[rawshay] into Wales 14th October 1789'.
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45 GwRO D2.162 fos.66, 77 & 96, RC to J. Cockshutt, 5 June 1790, 21 October 1790 & 14 April 1791; GloRO D1086/F120, W. Lewis to J. Blagden Hale, 18 June 1790.

46 GwRO D2.162 fo.87, RC to W. Stevens, ? January 1791. James Cockshutt (d.1819) was a Yorkshireman whose family had a long standing involvement in the iron trade; he remained in South Wales after being sacked by Crawshay in 1791. In the mid-1790s he was worked as a free-lance engineer on, inter alia, the Swansea canal, (BUL Journal of Joshua Gilpin, vol. XIII, 31 July & 4 August 1796). He returned to Yorkshire to take possession of the Wortley ironworks near Barnsley after the death of his brother, c.1796/97, (NLW 6582E fo.46, J. Cockshutt to T. Mansel Talbot, 26 December 1798). Also, C.R. Andrews, The Story of the Wortley Ironworks (2nd edn., Nottingham, 1956), pp.40-51.

47 GwRO D2.162 fo.47, RC to J. Cockshutt, 30 July 1789.

48 R. Price, Labour in British Society, p.35. Cf. the verdict of Patrick Joyce: nineteenth-century industry was "characterized by weakly elaborated managerial structures...Labour management tended to be labour rather than capital intensive, working through the existing division of labour rather than re-ordering it wholesale by technological or organizational change". P. Joyce, 'Labour, Capital and Compromise: A Response to Richard Price', Social History, IX, 1 (1984), p.69.

49 GwRO D2.162 fo.222, RC to J. Wilkinson, 20 April 1797.

50 It is worth noting that the most celebrated instance of bureaucratic discipline in an eighteenth-century industrial concern - the lawbook of Abraham Crowley - was prompted less by the size and complexity of the
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Similar difficulties were experienced in other areas where the iron industry was expanding at great speed, and various expedients were tried. In the 1770s, John Wilkinson entrusted the management of his new works at Bradley, Staffordshire to the former overseer of a Bilston glass works. "Presumably Wilkinson recruited him on account of his experience with coal fired furnaces and the scarcity of such men when blast furnaces were still new in the area". W.A. Smith, 'John Wilkinson and the Bradley Ironworks', (unpublished M.A. thesis, University of London, 1968), p.143.


53 GwRO D2.162 fo.55, RC to J. Cockshutt, 25 November 1789.

54 SRO 1781/6/21, G. Gilpin to W. Wilkinson, 10 October 1796.

55 GRO D/D Pe 3(d), 'First suggestions for the formation of a Case on S.H.s conduct'.


57 'Clerks' were, however, essentially concerned with the question of production. The marketing of iron tended to be a quite separate business, carried on away from
Merthyr. Initially, Dowlais iron had simply been distributed among the partners, according to the size of their share in the Company, for them to dispose of: (PRO C 12/1059/31). This arrangement was maintained in the late eighteenth century by William Lewis, who regularly took ten-sixteenths of Dowlais's production for refining at his own Pentyrch works. Production and sales were rigidly separated at Cyfarthfa, the entire make of the works being sold to Richard Crawshay's London merchant house at George Yard, Upper Thames Street, at a fixed price. The London house took total responsibility for sales. An identical arrangement was adopted for the disposal of Penydarren iron in 1799, when the Penydarren partners set up their own merchant house at Steel Yard, Upper Thames Street: (PRO C 13/1642/32).

58 GRO D/D G 1799 B-W fo.380, W. Taitt to T. Guest, 6 May 1799.


60 GRO D/D G 1815 M-R fo.237, W. Richards to J.J. Guest, 9 October 1815.

61 As Taitt put it: "Our men who have regular appointments by the year such as Smiths Carpenters &c when Accidents happen are those I expect to Work 'till the Accident be repaired without being paid any overtime", (GRO D/D G 1814 R-W fo.329, W. Taitt to J.J. Guest, 30 July 1814).

62 NLW Merthyr Tydfil Parish Register, 1763-99, 1 December 1776.
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64 Cambrian, 10 January 1807.

65 Cambrian, 16 August 1806. See the rule book of the Society, (GRO D/D NMW 14), and its annual statements of account showing the payment of an annuity to Head's widow (GRO D/DXgc 12/1-33). The Sympathetic Society, instituted for the benefit of members' widows, was an early endeavour in middle-class self-organisation in Cardiff. Its annual meeting in 1797 attracted "all the persons of any Respectability in the Town and Neighbourhood", according the diarist John Bird, the steward to Lord Bute, who seems to have been a member himself, (CCL MS. 2.716(2/3) fo.53, 2 May 1797).

66 Perhaps this should not be wondered at. Even Samuel Bentham, the prophet of panopticism and assembly line production, did not attempt to specify the ways in which labour was to be conducted during his tenure as Inspector General of Naval Works. Rather than than impose an extensive re-division of labour along more 'rational' lines, he sought to improve efficiency by putting more stringent checks on the movement of materials between different departments within the naval dockyards. See R.A. Morriss, 'Samuel Bentham and the Management of the Royal Dockyards, 1796-1807', Bulletin of the Institute of Historical Research, LIV, 130 (1981), pp.226-40.
Chapter Five

The Culture of Skill

The managers and agents of the ironworks were separated from the productive process in action by a corpus of skills that might almost be classed as a cultural formation *sui generis*. It was this 'culture of skill' that baulked any attempt by the ironmasters to assert an unhindered control over the labour process. It proved largely impervious to a detailed division of labour, with most of the craft skills showing a defiant indivisibility. And capital, in great accumulations, was unable to divorce the crucial techniques of ironworking from the body of the ironworker. The productive process set in motion by the capital of a Homfray or a Crawshay rested on a fulcrum of skilled ironworkers: the keepers and founders who tended the blast furnaces; the moulders who worked the cast metal; the finers, puddlers, and shinglers who converted cast into wrought iron; the rollers and mill-workers who fashioned the wrought iron into a marketable commodity. These formed the corps of workers which Robert Thompson termed "the constant men at the Furnaces",¹ those individuals who could supply that valuable commodity, labour specifically adjusted to ironmaking.

The skills of ironmaking were indeed of inestimable value. This was a judgement shared by both ironmasters and
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ironworkers in the late eighteenth century, and one which has been endorsed by later writers. The considerable importance which will assigned to the notion of skill in the pages which follow is in keeping with these precedents. However, it is necessary to define skill in a way which will surpass the commonsense notion of an acquired aptitude or 'knack', a quality of obvious and timeless validity. On this view, skill needs no explanation, only a registering of its presence or absence.

Contrariwise, the concept of 'skill' used here is not as something 'given'. Instead, it is taken to denote understandings which are constructed around certain practices. Skill should not be construed as a straightforward reflection of the difficulty attached to a set of operational demands, flowing 'naturally' from a technique or combination of techniques. In fact, skill pertains less to the bundle of acquired muscular and mental actions/responses associated with the performance of this or that job, than to the valuation which is placed upon them. Hence the definition of skill is never wholly settled. The valuation made by the worker may run counter to that of the capitalist, and an appraisal commanding a consensus within a trade might appear illogical to outsiders. Moreover, since the boundaries of skill are
pliant, they are liable to be repositioned in such a way as to buttress the vested interests of particular groups. The confinement of women to subordinate (and so, poorly-rewarded and ill-esteemed) positions at work is only the most notorious instance of this phenomenon.

To deny the fixity of the meaning of skill is helpful in that it disrupts the easy but ahistorical assumption, descending from mid-Victorian celebrations of artisan 'respectability', that the designations 'skilled' and 'unskilled' may be used as synonyms for forms of cultural and political expression which are eternal. Here, the skilled man is held to be provident and self-disciplined in work, recreation, and politics, while the unskilled man displays corresponding defects of character. Yet there is no reason to presume that skilled workers in the Merthyr ironworks should have evinced the idealised virtues of the 'labour aristocrat'. Equally, there is no a priori justification for accepting a negative evaluation of the 'unskilled', as being capable only of anarchic and ephemeral action. One corrective to this view is available in the example of the keelmen of eighteenth-century Newcastle. They performed what was, by twentieth-century standards, an unskilled and age-specific function, transferring coal from riverside staiths to ocean-going collier vessels. Nevertheless, they were bound by a
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proverbial group loyalty, and proved capable of mounting disciplined and sophisticated agitations in the defence of their interests.²

None of this may be taken as meaning that 'skill' is illusory, an idealised construct without an objective content. Skill must be thought of as a cultural construct, rather than an unchanging, 'organic' phenomenon, but it is still a construct founded on actual work practices. It should be remembered that in British culture, at least, social distinctions arising from work have always been related to the character of the labour involved. The criterion on which differentiation is based has been the job's difficulty of execution, rather than any effect of the labour, such as the value added, or the utility or prestige of the final product.

Moreover, the great immutability of the ironmaking skills in the nineteenth century was an indication of a solid, irreducible reality which underlay them - and which was to be circumvented only by wholesale technological change. The primacy of the puddler in the making of wrought iron was never shaken, despite the wishes of ironmasters who would have gladly devalued the puddlers' labour. Obsolescence came only with the total supercession of wrought iron by mass-produced steel. This was evident in
a back-handed tribute from William Menelaus (1818-83), the manager at Dowlais in the 1850s:³

"Puddling has remained...since its invention, almost without improvement...Here is a process which absolutely costs nearly one half of the value of the material operated upon, to change very slightly its chemical condition, a large proportion of the cost being for manual labour of the most severe kind, of which the supply barely keeps pace with the demand. When iron makers went mad with excitement about the Bessemer invention, it was only an indication of how strongly they felt the necessity for improvement".

* * *

It is by no means easy to specify what constituted the 'culture' of skilled iron work. Little record of its characteristic gestures and usages has survived. To an extent its features may be inferred from the pronounced corporate spirit of the ironmasters, itself a reflection of the sense of collective identity that suffused the trade. However, the denizens of the casthouses and forges are almost entirely mute. That so little evidence should have emerged thence is, though, a indication in its own right of the character of the culture of skill which flourished in those installations. For the practices which took place within them were 'mysteries' in both eighteenth- and twentieth-century senses of the word.
Giving definition to these 'arts' is problematical. For one thing, insiders were themselves unsure of the how the working of iron was to be categorised. When William Yates, the Staffordshire ironmaster, testified before the House of Commons select committee on artisans and machinery in 1824, he gave a curious response to the opening question - 'What proportion of men you employ, may be artizans?':

"I really do not know exactly what description of men come under that term. Our men are employed in working blast furnaces, forges, mills, a tinned plate manufactory, and a foundry".

Furthermore, the eighteenth-century iron industry left no texts detailing the procedures of furnace management precisely because the nuances of manipulation and timing that vivified the bare schedule of technical operations did not lend themselves to inscription. The furnace keeper, it was said, was confronted by a process of such volatility and elemental energy as to preclude measurable human interference:

"no ingenuity of man has hitherto been able to regulate or controul the operations of an iron furnace; it is not like the mashing tub or vat of a brewery, that may be emptied and measured with a pail, or drawn off with a cock at pleasure. To perform the operation of smelting Iron Ore, and afterwards working it, the greatest degree of heat that human art can raise, by means of the most powerful steam engines, is requisite, and this heat in its..."
progress will frequently burst its bounds and overwhelm all control."

This image of the blast furnace as a juggernaut, impervious to human direction, was overstating the case. A furnace was subject to control, albeit to control that was provisional.²

"A Furnace is a fickle mistress and must be humoured and her favours not to be depended upon. I have known her produce 12 tons per week, and sometimes but 9 tons, nay, sometimes but 8, the excellency of a Founder is to humour her dispositions, but never to force her inclinations."

The metaphor of seduction is contrived, but it does point to the perpetual uncertainty that attended ironmaking, and to the pivotal role of skilled labour in achieving a successful outcome. It did rest with 'the excellency' of a furnace keeper to coax the optimum from a furnace. The success of a tapping owed everything to the keeper's capacity to divine the state of a chemical transformation encased within several feet of masonry and fire-brick. The exercise of such judgement, a discretionary factor which was intangible, unquantifiable, and unique, lay at the heart of all the iron trades.

Knowledge of ironmaking was acquired through empirical engagement, by watching and assisting a man already
schooled in that knowledge. In an industry in which the condition of a blast furnace was signified by the colour and texture of the cinder it exuded, or where the quality of mine was gauged by its adhesion to the tongue, nothing else would suffice. Only repeated observation could teach the meaning of the blue flames of carbon dioxide which flickered over the boiling iron in the bowl of the puddling furnace, and suggest the appropriate response. Was more or less heat required? Should the damper on the flue be lowered or raised? Should the iron be doused with water? Was sufficient air being played over its surface? How near was the metal to 'coming to nature'?  

Formal apprenticeships were rare, presumably because, for centuries previously, the mysteries of ironmaking had usually been practised in scattered, forest locations, beyond the purview of town-based regulatory bodies. "The only apprentices we have", investigators were told at Penydarren, "are in the shops of the carpenters, the pattern-makers, the roll-turners, and the smiths". That is, in those departments that were largely removed from the processing of iron. For most of the iron crafts, it was assumed that de facto exposure to the operations of the casthouse or forge, under the tutelage of an older man, would allow the steady assimilation of knowledge. The manager of the Pentyrch works could recommend one
James Edmunds as a master finer on the grounds that "he is bred up a Finer, and has worked a great while amelting". The eighteenth-century notion of being 'bred up' is apposite, suggesting both the acquisition of bodily strength, and steady accretion of dexterity and craft lore:

"In the forges the boys begin as draggers and shearers and...rise to be catchers at the rolls and from thence to be second puddlers. A lad of ordinary strength may begin puddling at 15 to 16, it requires five years practise at least to learn puddling, so that at 21 he is fit to take a furnace".

The capacity to work iron could never be guaranteed in advance, and it is very probable that under this regime of tuition there were many who never attained the status of puddler - they simply lacked the aptitude.

The acquisition of 'mastery' over the rolls or the puddling furnace, the last word in craft competence, was not accorded any formal registration. It was a qualification which was constituted by a set of expectations that were, as will be seen, social as much as they were technical in character. A master was marked out by his leadership of a gang of 'hands', as well as by his expertise. The technical accomplishments required of him were indeterminate; versatility was demanded as much as virtuosity. He knew not just how to carry out the
prescribed tasks at the rolls or puddling furnace, but how
to build, adapt, or repair those items of plant.

Craft skills were not amenable to codification; they were
transmitted by being, literally, embodied in the person of
the puddler, the moulder, or keeper. This is not to say
that skilled ironworkers can be seen as the guardians of
an intuitive workshop practice, incapable of abstract
expression. Nor would it be accurate to say that their
skills were never subjected to systematic experimentation,
and might therefore be counterposed to a 'scientific'
knowledge. The supposed dichotomy is anachronistic; at
least, it was not perceived by those workmen who were
among the founders of the Cyfarthfa Philosophical Society
in 1807. This assembly of local mathematicians,
astronomers, free-thinkers, and francophiles was famed for
the mechanical genius of its members. Peter Onions
(d.1798), the brother-in-law of John Guest, was a man of
the same stamp. His training in the forges of Shropshire
had enabled him to devise a coal-fired method of refining
pig iron in advance of Henry Cort's patent for puddling.
But in the last years of his life, he was known as a
mathematical instrument maker rather than a practical
forgeman.
As the example of Peter Onions indicates, the skills deployed in the ironworks were by no means ossified. J.R. Harris has emphasised how closely technological advance was allied to craft skills, and emerged from the workshop rather than the laboratory or treatise. Innovation was underpinned by the sedimentation of craft knowledge. Thus, it was, for example, Richard Brown, formerly a master roller at Dowlais, who built the boiler, and performed all the smithing work for Richard Trevithick's revolutionary steam locomotive in the Penydarren workshops over the winter of 1803-04.

The limitations which this culture of skill placed on the control which the ironmasters exercised over work is evident. The difficulty was not so much to divest skilled workmen of their knowledge, but for the ironmasters to achieve their own independent access to it. In the spread of new techniques, the exchange of knowledge occurred between workmen, with the ironmasters acting as brokers. When Henry Cort demonstrated his puddling technique at William Reynolds' Ketley (Shropshire) works in 1785, he took care to safeguard his interests by requiring written confirmation that he had vouchsafed his secrets. This document was signed, not by Reynolds, but by "Thos, Cranage, Thos. Jones Hammermen to Messrs. Reynolds & Co. at Coalbrook Dale". Crawshay had encouraged the trials
at Ketley in the hope that the new process would release Reynolds from "a very harmful situation being quite at the mercy of his workmen". Few hopes can have been so completely dashed. As has been seen, puddling was one of the citadels of craft control in the nineteenth century.

In general, the technological changes of the late eighteenth century, associated with the introduction of coal, strengthened the position of skilled ironworkers. The expansion of production enhanced their scarcity value, while the exclusiveness of the ironmaking arts was but little undermined. If anything, the mysteries of the old charcoal industry were reproduced on a far vaster scale. In the main, alterations in the division of labour effected the lowlier forms of raw material processing which occupied the furnace bank, or the disposal of scoriae. These ancillary functions passed from a handful of adult male labourers to teams of female and juvenile workers.16

This is not to say that the ironmasters were content to preserve workings arrangements with the privileged position of skilled men intact. James Watt junior advised Samuel Homfray to entrust the management of his new engine to the submissive rather than the expert:17
"it is not necessary that you should fix upon men professing knowledge of Engines or machinery. They have generally so much conceit & so much obstinacy, as to prefer scheming for themselves, to following instructions given by us...prefer common smiths, carpenters, or even labourers who will merely attend to what they are bid".

However, Watt's optimism as to the dispensability of skilled firemen is not born out by the tone of self-esteem with which they continued to advertise their services. An engine-tender wrote to Thomas Guest from Cornwall, boasting of his twenty years of experience in the mines of that county. He was, he said, conversant with "the Mecanical The Mathematical and part of the Philosophical parts of the Steam Engine". This man's capabilities were clearly of a particularly novel and lucrative nature, and his terms reflected this - twenty-five shillings a week, a house, garden, firing, and a preference for working the morning turn. 18

In view of the seemingly immovable hold of the adept ironworker on the labour process, how were the ironmasters to impress their design upon the day-to-day conduct of work? Only by embarking on a concrete analysis of work relations at Merthyr will it be possible to broach this problem. But before doing so, it will be well to venture
certain speculative remarks about the general conditions which sustained the authority of the ironmasters.

* * *

Firstly, there are signs that the ironmasters had long sought to extend their own sense of the corporate identity of the trade, to engulf the skill culture of their workmen. In 1712, Ambrose Crowley III, that expert in matters of authority, advised his half-brother to make himself the "perfect master of the business" at his small steel furnace at Stourbridge, by labouring at the hearth himself. By this means, he would make himself the "master for ever afterwards of your workmen when they know you understand it". Over a century later, entrepreneurial hagiography assigned to Josiah John Guest the ability to puddle a heat of iron or hew a hundredweight of coal with the same facility as any of his employees. Needless to say, there is not a scrap of evidence to suggest that Guest was in the habit of doing any such thing. Nevertheless, that such mythologising was current suggests that some form of ideological suasion was at play which attributed to the ironmaster a participation in the knowledge which his workmen put into practice.
The implications of this - that the ironmaster had himself been inculcated into the mysteries of the trade - were twofold. One was to stress the omniscience and power of the ironmaster, who could, by virtue of his command of the iron-making arts, detect the least deviation from the proper performance of labour. The other, conversely, was to assert the inclusion of the iron capitalist in the communality of the trade as an equal partner.

Alternatively, it is conceivable that strains of obedience and subordination were to be found that located their object not in the person of the ironmaster, but in the furnace plant. Within the ironworks, a tendency to anthropomorphise machines and structures was very strong:

'The poor furnaceman seems to regard his furnace as a living creature, and he talks of it as such...when the stream of molten metal runs too thin, he says "she scours, we must give her more mine". If, on the other hand, the metal flows curdy and thick, he says, "she gobs, and must have more lime".'

As has been seen, a blast furnace could readily be seen as a power unto itself, always with the potential to 'overwhelm all controul'. Where neither the ironmaster nor his workmen had a sure chemical understanding of what took place within the furnace, and where each 'campaign' was different, it is possible that standards of
workmanship and behaviour were exacted from workmen out of respect for the capricious materials on which they worked. There were forms of obeisance within the ironworks which presupposed just such a communal understanding of good practice. At Dowlais, furnace fillers who failed to show due attention were publicly chastised for 'Cheating the Furnace', not for abusing the trust of their masters. Printed placards expressing regret, paid for by the culprits, were used to advertise the offence through the works. It would seem senseless to prosecute this ritual unless it was thought that offending against the furnace would arouse widespread repudiation.  

These then were general, pervasive conditions; they marked out the broadly defined space within which the ironmasters had to piece together a viable system of authority. The masters did so with some circumspection, with the use of subcontracting or comparable ad hoc arrangements. Forms of indirect employment were, of course, ubiquitous in eighteenth century industry, and given the ironmasters inability to penetrate the domain of skilled ironmaking, they had no reason to pursue any alternative. Power and discretion were vested in the master workman, to whom the hiring of labour was ceded in the confidence that he could command the fealty of the gang of 'hands' gathered about him. This was customarily the case, for the ordinary hand
gained a vicarious recognition as a reliable and worthy workman by his attachment to a master, as well as some fixity of comradeship and solidarity.

Master workmen were not necessarily subcontractors strictly defined. They were the directors of the labour process, but not always its paymasters. Iron workmen were often paid directly by the iron company, according to a multiplicity of piece rates. The following prices, for example, were allowed for castings at the Penydarren moulding shop in 1799:

- Dram plates 12/-
- Wagon way Rails 8/-
- Dry Sand 18/- per Ton
- Green Sand 18/-
- Loam 29/6
- Pipes 1/- per Inch in Diam.r the length, weight or form not at all considered

The above prices we pay exclusive of Dressing which is done by the Company-
- Open Sand Castings 10/- per Ton and dressed by the Moulders.

However, the procedures of payment often parodied the subcontract form, emphasising the leadership of the master workman, not the ironmaster. At Dowlais in 1804, William Corns and 'his men' - a team of sixteen ball-furnacemen - were all paid by the Company on an agreed rate for every ton of iron they processed. Yet Corns also received his 'profit' from each man, a farthing per ton which each of them offered up as a tribute to his authority as a master.
ironworker. Again, the manner of awarding additional payments and perquisites reflected both the communality of the work gang and the hegemony of the master workman. Bonuses were given in the form of undifferentiated lump sums (or barrels of liquor), made over to the master workman, rather than individually determined rewards for each 'hand'. Thus, for exceeding a set production target at his blast furnace, the keeper collected his 'guinea', which he then shared out among the furnace crew. The distribution of the £5 bonus paid to puddlers at Dowlais for every hundred tons of iron they handled collectively, was governed by similar considerations.

The ironmasters were loathe to infringe arbitrarily on the prerogatives of the cadre of skilled ironworkers who de facto ordered the working environment. And this despite the lack of any necessary connection between the optimum manning levels in the different branches of their works as perceived by the ironmasters, and the actual hiring practices of the master puddler or furnace keeper. "I cannot help thinking", Taitt told Thomas Guest, "that you may compel the Rollers to put on another set of hands (2 extra each turn)...unless we do so we shall never be able to get on, we are not to sacrifice our own interests to their profit only". Taitt used the language of compulsion, but in less exasperated moments he recognised
that the labour process could not be shaped by dictation. Recurrent complaints about the conduct of the rolling mills indicate the effective resistance which met attempts to invade the domain of the master roller:

"Richard Browns Conduct is & has been such as I will on no account put up with--he promised to get good men...we will not take bad ones--when the men are put on which he has procured let them be narrowly watched & if they are not Compleat Masters of their business the Rolling shall be taken from him".

Taitt's fulminations against the Brown family, whose members colonised the Dowlais mill, are testimony as much to his impotence as to his power. George Brown, the wayward uncle of Richard, exemplified the autonomy which a master workmen could exercise. His insouciance prompted sarcastic comment from Taitt, ("George Brown must not have it all his own way—you may when he is perfectly sober ask him if he wishes to give up the Rolling also"), but the ironmaster could not take hasty action against a man of valued and scarce talents. After Brown had subjected Mrs. Taitt to a drunken harangue, in which he threatened to leave Dowlais, William Taitt could do no more than "wish another cou'd be found in his Stead".

The labour process had to be meticulously constructed with blandishments, cajolings, and threats. The hiring of a workman involved negotiations that extended far beyond the
settling of a basic monetary rate for the job. Aside from demanding accommodation and concessionary fuel, a workman might seek guarantees about the steadiness of his earnings, or an understanding that his spouse or children would be found gainful employment. A Dowlais furnace keeper gave his notice in 1806 because his children were unable to get their usual work of filling coke baskets on the furnace bank. He protested that the bridgestockers would not take them on, even though "there is a Great many Girlds at work som that there Father is at pendarran works". Two years earlier, Taitt had to caution Thomas Guest to adopt a conciliatory approach to 'Evan the Smith' who was pressing for his son's wages to be advanced. Although Evan's contract had yet to expire, Taitt advised acceding to his demands rather than risk his eventual departure to the Plymouth works, otherwise Dowlais would be completely at the mercy of George Brown.

Workmen were also concerned to ensure the continuity of their employment. The halting of production because of summer drought or winter frost was a perennial source of dissatisfaction. In the summer of 1794 Richard Hill found his men "tired out of Patience & ready to revolt" due to the shortage of water. Since earnings were directly related to the volume of work, workmen might abscond or simply refuse to engage at an ironworks which became
notorious for stoppages. It was for this reason that forgemen shied away from William Lewis's Pentyrch works on the Taff, north of Cardiff: "good ones seem afraid they should not have constant work in dry weather". However, as a major partner in the Dowlais Company, Lewis was able to transfer key workers who were threatened with involuntary idleness to the Merthyr works. The approach of summer was always a critical period for water-dependent Pentyrch, and requests for assistance were despatched to Dowlais:

"Our water at the Furnace is too short to work the Melting Finery, and therefore our Melter Richard Symon is at liberty whenever you can employ him, and the sooner the better, lest he should go off to some other place".

With autumn, the current of the Taff flowed strongly again, and Pentyrch men could be recalled. For Richard Symon, the pattern of industrial transhumance was one he followed throughout the 1790s. This example of the managed dispersal of skilled personnel between 'friendly' works can only be traced thanks to the ample records of the Dowlais Company. The lack of detailed documentation for the other Merthyr works prevents comparison. However, the spread of industrial interests which the other ironmasters achieved in the early nineteenth century suggest the likelihood of similar schemes.
for one, took pains to preserve his workforce during the slack period.35

"When his works were at a stand a short time since, he employed all his men on half-pay to clear the country of stones, several thousand tons of which he threw into the river, and then cultivated the ground thus cleared".

* * *

Although the ironmasters were frequently obliged to temporise, compromise, and conciliate, in order to fasten down skilled labour within the confines of their works, their power was bolstered by the agreements by which workmen bound themselves to 'serve a term' at Cyfarthfa or Dowlais. For the ironmaster, the contract of employment secured exclusive rights to a workman's labour for a definite period of time, and granted him coercive power to enforce the proper completion of that labour. The form of the agreement varied. The pact might be committed to paper, but this was by no means essential, as William Taitt conceded in 1803, upon learning of a man's prior engagement at the Nantyglo works: "if you find there is an agreement Signed by Edwd Lloyd—or if he engaged before any Witnesses to serve them 5 years twill be the same thing".36 Without more evidence, it is not possible to
establish what was normal practice at the Merthyr ironworks, but at Dowlais at least, verbal agreements were common, usually witnessed by a senior workman such as William Richards or Yanto:

"Wm Richards must remember that the terms were talk'd over in the Counting House with Evan tho' he did not then close--but came to me in the Forge the next day & said he wou'd come on the terms proposed & I am almost certain that 3 years was the time".

The five-year term allegedly agreed by Edward Lloyd was unusual, and only warranted by his status as a master collier from Shropshire. Less exalted workmen were not subject to such lengthy periods of service; a year, the duration of a single task, or an open-ended stint to be terminated by a month's notice were all alternatives to be settled on.

A month's notice was the "Established Custom" at Dowlais. Failure to comply with this requirement brought recourse to the well-thumbed legal handbooks in the works office. "I have known repeated instances", a local attorney pointed out, "when you have sent men to Prison for violating this Custom". Certainly, the ironmasters were not squeamish about taking advantage of the legal powers at their disposal. "Apply to Mr. Homfray...for a Warrant against Ferriday for leaving his Work", Taitt advised in
1803, "his agreement is for a year & his Conduct is imfamously bad_3 months in Bridewell will be of use to him". This was the coercive power which, at bottom, sustained the authority of the ironmaster.

Of course, there was more to the contract of employment than veiled coercion, for terror is of limited utility as a stimulus to labour, especially skilled labour. As has been seen, an agreement between an ironmaster and a workman implied the recognition of a panoply of usages and practices which were 'customary' to the trade. Such recognition, and terms of payment which were far from contemptible, were underpinned by the tautness of the local labour market during Merthyr's wartime heyday. It was the complex interaction of these elements, coercive and concessionary, which governed the actual course of work relations.

Some of the complexities were revealed in a key episode at Dowlais in January 1799. A dispute was triggered by the Company's efforts to withdraw unilaterally the 'guinea', the bonus paid to a furnace crew for casting over forty tons of iron in a week. John Griffiths, the keeper of Dowlais No. 3 furnace, later presented this testimony:

"we had made at N. 3 Something above 51 tons of iron: about 3 weeks back and the other furnaces
had made something above 40 tons ea[c]h So dick davies hapened to go to the office first and the guinea was refused him as was Costomary So he came and tould the Rest of the keepers and me how it was then they all declared that they would not work Except they should have it So we went all together to the office and because dick davies and me Could Speak english they desiered of us to taugh for them as well as our selves".

The interview which followed was evidently acrimonious. The outrage felt by the furnacemen who crowded into the office, was fuelled further by the liquor which brandy smugglers had been selling about the works during the night. The "strength of the spirits", Griffiths conceded, "Caused me to say more than if I had been sober". Even so, the sense of grievance was real, and the show of resistance sufficient to persuade Thomas Guest to pay out guineas for the time being - and to convince William Taitt that consultation with his fellow ironmasters was necessary before proceeding further.

The subsequent discussions between Taitt, Samuel Homfray, and Richard Hill revealed some interesting differences of approach. Homfray was ready to discontinue payment of the guinea at once, but Hill was unwilling to do so until his existing agreements with his men expired. This divergence cannot be explained with any certainty. Perhaps payment of the 'customary' bonus was explicitly guaranteed in the furnacemen's contracts at Plymouth. Even if the guinea
had no contractual status, Hill may have been more fearful than were his more formidable neighbours at Penydarren and Dowlais, of the unwholesome reputation that was to be earned by arbitrarily ending cherished customs of the trade. Iron was an industry hungry for labour, and Hill may have chosen not to disabuse his men of their notions of the 'reasonableness' that was to be expected of an ironmaster.

Without the agreement of his fellow ironmasters, Taitt lacked the confidence to press on alone. At the same time, he was determined to cow the furnacemen at Dowlais, who had been so roused by the attack on their guinea as to demand an advance in their pay. If the guinea could not be abolished at once, Taitt was adamant that the threshold at which it was granted should be brought into line with the practice Homfray had introduced at Penydarren, that is, awarded at 60 rather than 40 tons. He went on:

"but there is one consideration above all, which is, that I take for granted our founders are under Agreement in which this new demand cannot be. therefore they must abide by their agreements or be sent to Bridewell by a magistrate--it is a Rascally demand and must be resisted in the first Instance--the increased Quantity of Iron made is a Sufficient encrease of Wages to them especially as it cannot be attributed to any exertions of theirs: but to our having expended £3000 to improve our Blast. Discharge or take any men you please only I rely on your close attention to the business so that we do not suffer by changing".
At Dowlais, Thomas Guest acted on these instructions, and sacked John Griffiths and Richard Davies, the two keepers who had been spokesmen for their fellow furnacemen.\footnote{42} This served only to harden the men's resolve. Their obduracy now crystallised into a definite combination in defence of the \textit{status quo ante}. From Cardiff, after lecturing Guest on his want of firmness, Taitt urged his applying to one of the ironmaster-magistrates of Merthyr to take punitive measures:\footnote{43}

"I advise you going to Mr. Homfray or Mr. Crawshay & get them to Commit to Bridewell 2 or 3 of the Ring leaders under the Act 6 Geo 3-Chap 25--which you will find extracted in Burn 20 Section of "Servants" Respecting, Miners Colliers &c &c & in the 16th edition...you will find it at the Bottom of Page 181--they may afterwards be Indicted for the Conspiracy not withstanding the Commitment".

Committments did follow, and apparently quelled the restiveness. That, at least, was the message of one piteous appeal to Guest from Cowbridge Bridewell:\footnote{44}

"i ham very sorry that I abused your Honer in taking so much upon me to speek for Others--I hope you will get me out of this whole of a place so soon as your Honer shall think fitt as I shall be Starved a live for my money is all spent..."
The struggle over the status and dimensions of the guinea points to the importance of the legal armoury which the ironmasters had at their disposal. Its importance was increasing in the late eighteenth century, as the mounting scale of production and rising productivity called customary awards into question with growing rapidity. Yet it is also clear from Richard Hill's hesitancy in committing himself to the campaign against the guinea, that the same trends also contributed to jealousy and disunity among the ironmasters. The same headlong expansion of the industry resulted in persistent shortages of skilled labour. These subverted all attempts to cooperate in the husbandry of labour. The imperative facing every employer, that of appropriating the greatest possible mass of labour, bred a fratricidal impulse among the ironmasters. Whereas they contrived, on the one hand, to immobilise skilled labour by means of binding contracts, they also strove for the obverse, the illicit mobilisation of their rivals' workforces. Hence the practice of labour poaching.

The enticement of workmen was universally deplored, but it was, as one ingenuous ironmaster admitted, an "act that all the Trade are in the habit of practising whenever it suits their convenience". Indeed, there were few ironmasters whose probity would withstand close
inspection. The practice was endemic, extending far beyond a knot of rogue employers. In years of a particular tightening of the labour market - 1790, 1792 or 1800 - company agents embarked on shadowy recruitment missions across South Wales, with authority to offer substantial inducements: "your John Taylor from Daulas", read one complaint from the Neath Abbey ironworks in 1800, "was down here ab. 2 weeks since, he Inveigled one of our Sand Moulders by telling him he would give him 30/- per Week".

Poaching had its risks. The offending ironmaster incurred the opprobrium of his neighbours, although this was likely to be short-lived and easily weathered, given the prevalence of the offence. More serious was the tendency to bid up wage rates, which poaching, with its "very extravagant offers", implied. Of most immediate concern were the law suits which the predatory ironmaster courted. In 1790, Taitt warned Samuel Homfray over the "Repeated Messages to one of our Founders to come down & Engage with you this is Illegal & extremely unhandsome, I therefore beg you may not do so any more otherwise you may Rest assured that we will take every legal Step to seek Redress". For the workman who was tempted to leave his employer without tendering good notice, the legal penalties could be immediate and severe. An aggrieved
employer could commit the man to gaol for breaking his contract. It was an eventuality to be catered for by the enticer. When Samuel Homfray sent for Benjamin Jones, the Dowlais founder, in 1790, it was with the promise that he would be maintained for a month in Bridewell at Homfray's expense if he would agree to work at Penydarren on his release.50

* * *

An accumulation of evidence has suggested one paradox of work relations at the Merthyr ironworks. The early development of 'management' as an identifiable function, if not a closely defined discipline in the iron industry, gave rise to managerial 'dynasties' at Merthyr, with an experience of direction and supervision in the trade which can be traced over several generations. Yet, at the same time, this unusually developed managerial tradition was circumscribed in its operations by the dense 'skill culture' which enveloped the making of iron. The impenetrability of this formation lent skilled ironworkers a certain autonomy, manifested in the communality of the work team.
But the coincidence of a nascent managerialism with a set of working practices which continually thwarted attempts at detailed control was just one of the paradoxical features of the Merthyr iron industry. It leads, in its turn, to a wider paradox of Merthyr as an industrial town. The exercise of authority in the workplace was characteristically diffuse, shaped more by the mediation of master workmen than by the dictates of the ironmaster or senior manager. Yet historians and contemporary observers alike have insisted on the solidity of allegiances to particular ironworks as the outstanding feature of Merthyr's development — that the varied pattern of ties, organised by craft, or work gang, or kin, was overlaid by seemingly monolithic loyalties to Cyfarthfa, Plymouth, Penydarren, and Dowlais. It is to this paradox that attention must now be directed.
Endnotes to Chapter Five
The Culture of Skill


3 'President's Address', Transactions of the South Wales Institute of Engineers, I, (1857), p.6.

4 BPP 1824 V, p.124.


6 Quoted in Hyde, Technological Change, p.9.

7 But see PRO C 103/181, for the articles of indenture, dated 8 May 1756, whereby Lewis Thomas of Machen, Mon., was bound apprentice to Nicholas Pryce the elder, ironmaster of Pentyrch, and Nicholas Pryce the younger, ironmaster of Eglwysilan: "To be taught in the Trade Art or Mystery of a Refiner of Iron".

8 BPP 1842 XVII, p.653.
Compare the more recent situation in the slate quarries of nineteenth-century Gwynedd. A boy would begin his working life as a *rybelwr*, performing odd jobs whenever called upon. From here he could hope to progress to be a journeyman, and then a fully fledged quarryman. However, some men found themselves marooned as *rybelwrs* for years, sometimes permanently. "There was no defined apprenticeship in the industry, and different men took very different periods to learn; some could never learn and some 'learn in two what others could not in twenty-two years'". R. Merfyn Jones, *The North Wales Quarrymen, 1874-1922* (Cardiff, 1982), p.75.

See Wilkins, pp.356-58.


D.R. Thomas, 'Richard Trevithick's Penydarren locomotive', (typescript in CCL).


Evidence for such a longterm shift is not abundant, but compare 'Mr. Hanburys cost and Yields of Pig, Rod, Hoop and Sheet Iron, 1704', (GwRO Misc. MS. 448), with the observations in *BPP 1842 XVII*, pp.478-9.
17 BRL Boulton & Watt letterbook (office) XX fo.204, J. Watt jr. to S. Homfray, 19 May 1798.

18 GRO D/D G 1802 A-P fo.30, J. Gregor to T. Guest, nd.


22 GRO D/D G 1799 B-W fo.311, G. Lyndon to ?, 9 November 1799.


26 GRO D/D G 1802 P-W fo.282, W. Taitt to T. Guest, 25 May 1802. The sons of Richard Brown, James and Thomas, were the exceptions which proved the rule by becoming iron capitalists in their own right. "The little property I have become possessed of", Thomas Brown told an anti-Chartist rally in 1839, "...was obtained by honest, industrious means, and I would now impress upon the minds of every workman that the same means which have raised me, are within the reach of every man before me. It was known that [my father] ...came into Wales as a workmen". Quoted in D.J.V.
Jones, The Last Rising: The Newport Insurrection of 1839 (Oxford, 1985), p.17. The brothers were proprietors of the Blaina ironworks, Monmouthshire, and James Brown was mayor of Newport in 1853, 1860 and 1861. See the DWB, sub James Conway Brown.


29 GRO D/D G 1806 A-T fo.21, S. Davis to 'Mr Teatt', 21 June 1806.


31 NLW Maybery 2482, R. Hill to J. Powell, 25 June 1794.


34 Samuel Homfray founded the Tredegar ironworks in 1800, in partnership with Messrs. Fothergill and Monkhouse of the adjacent Sirhowy works; Richard Crawshay became a part owner of the Union ironworks, in the neighbouring Rhymney valley, in 1800; Richard Hill took as a partner and son-in-law, John Nathaniel Miers, whose family possessed a cluster of small furnaces and forges in the west of Glamorgan. See Lloyd for a guide to the labyrinthine ownership networks in the industry.


37 GRO D/D G 1804 A-W fo.201, W. Taitt to T. Guest, 17 July 1804. But at the Ebbw Vale ironworks, contracts were assiduously recorded, possibly because the Harfords, ironmasters of unusual piety, imposed strict conditions of employment, like a pledge not to open an alehouse in the vicinity. For examples see A. Gray Jones, 'Quaker Ironmasters in Monmouthshire, 1796-1842', The Welsh Outlook, XII (1925), pp.42-46.


40 GRO D/D G 1799 B-W fo.236, J. Griffiths to W. Taitt, 8 February 1799.

41 GRO D/D G 1799 B-W fo.344, W. Taitt to T. Guest, 17 January 1799. The reference to heavy expenditure on improving the blast at Dowlais alluded to the Company's purchase of a new steam engine from Boulton & Watt. See BRL Boulton & Watt letterbook (office) XX fos.27 & 164, J. Watt jr to W. Taitt, 31 August 1797, & J. Watt jr to Lawson, 16 March 1798; letterbook (office) XXII fo.50, J. Watt jr to W. Taitt, 13 July 1799.

42 Richard Davies had worked at Dowlais in the 1780s, before leaving for the new Blaenavon works, and then a spell at the Old Park ironworks in Shropshire in the
early 1790s. He had been lured back to Dowlais in 1792 by the promise of his being keeper at the new furnace the Company was then planning. GRO D/D G outletters 1782–94 fos.331 & 405, W. Taitt to D. Tanner, 19 July 1790, & R. Thompson to R. Davies, 9 April 1792.

43 GRO D/D G 1799 B-W fo.352, W. Taitt to T. Guest, 3 February 1799. "By the 6. G.3. c. 25. If any artificer, callicoe printer, handicraftsman, miner, keelman, pitman, glassman, potter, labourer, or any other person, shall contract with any person for any time or term, and shall absent himself from his service before the term of his contract shall be completed, or be guilty of any other misdemeanor; it shall be lawful for one justice of the county or place where such offender shall be found, on complaint upon oath to him made by such master or by his steward or agent, to issue his warrant to apprehend such person complained of, and to examine into the nature of the complaint; and if it shall appear to such justice, that the person complained of hath not fulfilled his contract, or hath been guilty of any misdemeanor, the said justice shall commit him to the house of correction for the county or such place where such justice shall reside, for any time, not exceeding 3 months, nor less than 1 month". R. Burn, The Justice of the Peace and Parish Officer (11th edn., 1767), IV, p.140.

44 GRO D/D G 1799 B-W fo.228, J. Davies to T. Guest, 28 February 1799.

45 GRO D/D G 1806 A-T fo.158. A. Raby to W. Taitt, 30 August 1806.
46 See the evidence reproduced in Elsas, pp.64-70.


49 GRO D/D G outletters 1782-94 fo.324, W. Taitt to S. Homfray, 14 April 1790.

50 GRO D/D G outletters 1782-94 fo.324, W. Taitt to S. Homfray, 16 April 1790.

The powerful centrifugal energies which thrust the ironmasters into antagonistic camps are easily accounted for. The competitive pressures of the trade divided them one against the other; the poaching of labour was one aspect of this. But the existence of competitive rivalries among the ironmasters gives no clue as to why those rivalries should have been taken up and prosecuted further by their respective workforces. Indeed, the example of labour poaching is a useful reminder of how competition could contribute to the dissolution of settled workforces. Impressionistic evidence suggests that the
Chapter Six

Work and Conflict

In 1803 William Taitt took the loyalties of workmen to the ironworks which provided their employment as axiomatic: "a few of ours, Penydarren, & Cyfarthfa men", he averred, "will never meet together without some Jealousies".¹ Indeed, the animosities in the district developed a proverbial ferocity, and were to become, as more settled communities congealed around each works, entrenched local traditions. Writing of the 1820s, Gwyn A. Williams has pointed to the 'tribal' quality of "a commitment to 'Dowlais' or 'Cyfarthfa'".² Yet whatever momentum these traditions of inter-works rivalry later acquired, their origins and conditions of formation remain to be explored.

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turnover of labour was, in any case, vast, which would have militated against the easy growth of a loyalist community at any one works. Moreover, the commitment of the ironmasters to 'paternalist' gestures, which might have cemented the loyalties of their workers, was, as will be seen in a later chapter, at best equivocal.

The divisions by which Merthyr was riven are not, then, susceptible of facile explanation. Nevertheless, an influence of decisive importance is to be found in the performance of work, especially in the peculiar forms of mineral extraction which characterised the district. For, although working practices in the mines and collieries of Merthyr exemplified the indirect and fractured character of employment prevalent at the ironworks, they had the unexpected effect of compacting together what were otherwise diffuse and variegated workforces.

* * *

Jobs in the mineral workings were parcelled out among small subcontractors as a multitude of 'bargains'. Richard Crawshay found it impossible to give an estimate of the numbers he employed, "as he had captains under him, who had each agreed to furnish him with a certain
number". Crawford's admission points to one of the foremost advantages of subcontracting for the ironmaster; he was, at a stroke, released from the responsibility of recruiting and overseeing labour. At the same time, a degree of certainty was introduced into his cost calculations; he was able to fix in advance a whole range of outlays, as the bargains were negotiated. The ironmasters were also granted flexibility; highly specific bargains, such as for the supply of limestone to a furnace for the duration of a single blast, facilitated the attraction or repulsion of labour according to the peculiar seasonal rhythms of ironmaking. Above all, the system carried within itself the guarantee that the master collier or miner would attain at least a rudimentary pitch of productivity. The subcontractor inhabited the precarious and ambiguous territory between capital and wage labour, and since his prosperity rested on appropriating a share of the value created by those he employed, he had the keenest interest in keeping his labourers to their tasks.

It is necessary to dwell on the exploitative relations that existed within the subcontractor's gang. Bargains were awarded to individuals, or to two or three men in a tiny partnership, who then hired labour on their own account. There is no evidence of bargains being taken on a
collective or cooperative basis. Fragmentary indications survive of family groupings operating in the coal levels or mine workings, of a father labouring with his sons. However, there is no reason to presume that the family was a haven of affective warmth, still less that this should have been reflected in an equitable division of labour and its spoils.

There are few easy generalisations to be made about subcontracting agreements, if only because so little first-hand evidence of their operation survives. The records of the iron companies are for the most part silent, since bargains, once struck, were intended to be self-regulating. Their existence is only disclosed by their malfunctioning. But then, financial instability was a structural feature of subcontracting. Credit was central to the whole system, as the colliers and miners who skirted the edge of bankruptcy were painfully aware. And now and then, someone who could not scrape together the wherewithal to carry on, toppled into insolvency. Lewis Morgan, variously a farm bailiff, haulier, collier, and miner for the Dowlais Company, may stand in for the dozens, probably hundreds, who shared the same fate. Morgan's career in the 1790s had been, to say the least, chequered, and in 1801 he had to acquaint Thomas Guest with a fresh crisis in his affairs:⁵
"If you pleas to Get my Acco.t Settled and advance the amnt to pay workmen as per bill Delivered you Wich is £5-1-10 I am not able to pay them without your assistance and a bill of Change for Barrows and Ballance due to me in the Colliery..."

On this occasion he was tided over, but four years later Morgan had come to grief again, this time in the working of mine. A submissive note to William Taitt announced his decline into effective debt servitude: 6

"I am return'd in your Books @ Dowlais By Mr. Overton A very heavy Deptor Sum £53.18.6. which Amount I never had the Substance to stand against But if my Cutting was Measured and a reasonable price p. yard allow'd for the same I think it w'd nearly Clear the charge against me Etc. I have nothing but surrender my Self into your hands Which I am Willing to do the Best I can for the Company during Term of life".

From inferences and hints, it is possible to suggest that the size of the working unit in mineral excavation was small; its members were probably numbered in single figures. For a nineteenth-century comparison, it is better to look at the 'little butty' of the Forest of Dean who dug coal with his mate and three or four helpers, than the 'charter masters' of the Midland coalfields who took on whole pits at a time, employing dozens of men.7
As regards the bargains which were assigned to individual subcontractors, there was, naturally, considerable variation in detail. They were the outcome of complex negotiations, in which the monetary rate for the job was only one of a series of contingent factors. Richard Francis of Twynrodyn, a miner who engaged to raise a thousand tons of mine for Dowlais in 1814, settled on a rate of "7/9 per Ton, viz.\(^t\), 7/6 per Ton to be paid Monthly for the Mine Raised, and 3\(^d\) per Ton to remain in the Dowlais Company's hands until the said 1000 tons be raised". Francis also agreed to supply his own tools to the labourers he took on, but the Company was to bear the costs of fetching the mine from the workings and dressing it for the furnace. A final clause stipulated that the Company's hauliers were to remove the mine to the furnace bank within two months of its being dug and stacked; if they failed to do so, Francis was still to be paid the full tonnage, regardless of any deterioration which the raw mine had suffered through over-lengthy exposure to the elements.\(^8\)

The solvency of the master collier or miner depended on just such a specific distribution of responsibilities - on the size of the cash advance given for opening up a 'patch'; on the distance rubbish had to be wheeled; on shifting the onus of supplying pit timber or candles onto
the ironmaster. To take another case: when, in 1768, three colliers contracted to take on a coal working at 'Comcaned' (Cwmcanaid), they agreed to get the raw coal and deliver it - ready coked - to the furnace bank at Cyfarthfa "for the Consideration of four shillings per Dozen". They were to be supplied with "all the nesissary Tools that is Mandrelles Picaxes Weges & Hamers", and were to be awarded some initial allowance for opening up the workings. Thereafter, the four shilling rate was to cover the getting and processing of the coal, while extra expenses incurred in sustaining the fabric of the colliery were to be reviewed and haggled over at the end of every month. Or so the three colliers maintained, for Isaac Wilkinson, who had set the bargain, held to a different interpretation. He asserted that the four shilling rate was an "ample recompence", and covered 'dead' work (driving new headings or digging air holes), as well as the getting of coal.9

This disagreement was symptomatic of the wider slippage of control which the ironmasters experienced in the mineral workings of Merthyr. Each bargain was unique. Each was specifically adjusted to a particular seam of coal or patch of mine, taking into account the accessibility of the site, the geological conditions, and a host of other variables. It was this necessary variability that was
itself a source of disputes, for in the absence of any one, fixed benchmark governing the measurement and rewarding of work, conflicting opinions were scarcely avoidable. Furthermore, since most jobs involved the reckless exploitation of a physical resource over a finite period of time, there was little to encourage the preservation of coal and mineworkings in good order. (This lay behind an additional point of issue between Isaac Wilkinson and the colliers at Cwmcanaid, who were taxed with allowing the undue delapidation of the colliery). Annexed to this was the problem of the quality of output being abandoned for quantity. Where earnings depended on producing materials in the bulkiest form or at the fastest speed possible, quality was always likely to suffer, without corrective checks during the performance of work. These conditions nourished time-honoured frauds, such as that committed in 1785 by the miners of William Lewis of Pentyrch, when they contrived to be "overpaid on the Mine Castings, by their putting Stones, & Earth, in the middle of the Heaps in order for it to be paid for as Ironstone".10

A further aspect of the shortfall of control was the inability of the ironmaster to enforce the pace or duration of work. The effects of this could be assume spectacular proportions. When a miner named William
Thomas Griffiths agreed with Richard Hill to take on a mineworking for the supply of Plymouth furnace in March 1790, he pledged not to quit the work until March 1791. However, having pocketed the five guinea advance, Griffiths did not so much as start on the work for three months, while Hill "was in the utmost distress for mine, and was obliged to reduce my Furnace from 27 or 28 tons per Week into 22 tons". 11

Circumstances such as these could, in extremis, prod the ironmaster into intervening personally, so as to counteract the uncertainty surrounding the completion of work. Or it might be the bankruptcy of the contractor which forced the ironmaster to step in. On other occasions, discord between a subcontractor and his men, especially during phases of industrial expansion, could spur the ironmaster to slice away the web of bargains and bring men into direct employment. By so doing, he hoped to forestall discontinuities in production, or avert an exodus of labour to rival works. In the spring of 1792, Robert Thompson was vexed by a stoppage of colliers at Dowlais, "who came out of their work this morning without saying a word to any Body...I hope I shall get it settled between them & Tom: of the Waine [Waun]". 12 However, conscious of the epidemic of labour poaching then sweeping
through South Wales, Thompson determined to impose a tighter rein on his restive employees:13

"Our Colliers being...cursed uneasy I mean to bestow a stamp or two on Half a Doz. n of them and engage them for 3 Years by advancing the[m] a Halfpenny a Waggon...there are so many new works there will be no dealing with them without some hold on this Acc.t".

* * *

There were other aspects of work in the collieries and mines which drew the ironmasters into a more immediate involvement with the conduct of production, and forged tighter links between an ironmaster and the disparate collection of men and women who laboured on his behalf. Indeed, a close examination of work practices at Merthyr reveals the profound and very direct influence they exerted on social relations.

The process of scouring - the use of controlled floods to lay bare mine deposits - was of particular importance here. The minimal capital outlay it required, and the speed with which it could deliver a large volume of mine, recommended it to the ironmasters. However, scouring was
immensely destructive, churning up common grazing and ravaging fields. The resentment it incurred among the freeholders and small farmers of the parish can be imagined, and this was reflected in a rich crop of writs and threats. So bitterly was scouring resented, that when Richard Crawshay was interviewed before a committee of the Board of Trade in 1786 he could think of no assistance which the iron trade required of government, other than "a Stop by Act of Parliament to litigious Suits, created by very small individuals in the Hill Counties of Wales...for obtaining the mine by scowring away the Earth from it".14

One of these suits, in the early 1780s, reveals the impact that such disputes could have on social relations. In July 1782, writs were served on John Guest of Dowlais and two of his master miners by Rowland Williams of Gwernllwyn Uchaf, a neighbouring landowner, who charged them with knowingly damaging certain of his meadows. Guest's response was to despatch the two miners to the distant anonymity of Bristol, into the custody of alderman Thomas Harris, a former partner in the Company. Harris was to keep them safe until the crisis had passed. It was an astute move.15

"The Manoeuvre of sending those 2 persons away has answer'd the intended purpose as it has precluded Mr. Rowland Williams from proceeding".

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While Rowland Williams' suit languished for want of the two most material witnesses, Guest took steps to secure the allegiance of the remaining miners. They were stiffened against intimidation with free liquor, and indemnified against any future legal action. Such steps were urgently needed, for Williams had threatened:\[^{16}\]

"to send them to Jail & otherwise punish them if they shou'd dare to Scour from the Mountains, which threats have so much intimidated them that the greater number have left me in Consequence of them--by which my Stock of Ore has been decreasing very considerably...I was in danger of losing the remaining Workmen--they all refusing to Work had I not call'd them together & given them a good treat--likewise I was Compell'd to give them a written indemnity ...otherwise I must soon have stood still".

According to John Guest, Williams' legal manoeuvres had been preceded by provocative behaviour on the part of his (Williams') labourers, threatening the safety of the Dowlais furnace.

These circumstances are instructive. They indicate that antagonism was engrained in the very mode of working in the Merthyr district from an early date. Exposure to legal terrorism, if not bodily violence, became a routine accompaniment to the conduct of work. In consequence, the ironmasters were obliged to augment the cash nexus with physical sanctuary and legal succour, if they were to attract and retain labour. Equally, the gangs of
labourers in the mineral workings had an interest in the supremacy of 'their' ironmaster, since his victory would allow them to pursue their livelihoods undisturbed.

Tensions in the district, with all the reciprocities between ironmaster and workman which they implied, took on a qualitatively new aspect from the mid-1780s. Hitherto, the adversaries of the ironmasters had been those "very small individuals", the freeholders and tenants who held the ninety-three farms in Merthyr parish. Then, in 1785, the Penydarren works went into blast for the first time. And in 1786, Plymouth and Cyfarthfa, which had been part of Anthony Bacon's combine, were relaunched as separate concerns. Henceforth, the important contests were between the four great ironworks themselves.

As the upward trajectory of local iron production steepened in the late 1780s, the ironmasters were pitched into conflict. With the extension of the ironworks, the existing patchwork of leases was strained and tightened, and an already complex division of property was further obscured beneath a thickening matrix of roads, tramways, watercourses, and cinder tips. Amid so claustrophobic a concentration of industry, contentions became inevitable as the mounting demands for coal, mine, and motive power,
drove up the incidence of trespasses, lease infringements, and damage to property.

As early as February 1786, William Taitt found cause for complaint to Samuel Homfray:17

"your miners Viz Lewis Griffiths and his men go upon the mountain & turn the water towards their workes by which they not only invade our property, but have damaged the road so much by scouring down one of the bridges that it is render'd impassable by the waggon...be Assur'd that the next Complaint I receive against any of them for the like offence shall instantly be follow'd by an Action against them".

The prudent ironmaster extended his aid and protection to the gangs of workmen who supplied him with raw materials. He also held them ready as a means of harrassing his neighbours should the need arise. An incident in 1806 illustrates the mechanisms at play. Samuel Homfray engaged a miner to "get a certain quantity of mine at 6/- per ton", from ground adjacent to the Dowlais works. Although the Dowlais Company had laid a rail road over the land, connecting its furnaces and collieries with its forge, the Penydarren Company held "an unquestionable Title" to the mine beneath the surface. Accordingly, Homfray let it be known that if the railroad was not dismantled, he would give his miner "full liberty to stop it up by throughing rubbish upon it, provided it is in doing his duty according to his agreement...if the Dowlais
company think themselves injured and resent it, he will
support the man thro' the action".18

By the early 1790s, two persistent points of conflict can
be identified. The emergence of the first, between
Cyfarthfa and Plymouth, was precipitated by the
commencement of the Glamorgan Canal in 1790. The rival
ironworks were sited on opposite banks of the Taff, and
both drew heavily on its water for power. However, the
diversion of water to the canal threatened to deprive the
Plymouth works, downstream on the river, of power.
Although the Plymouth furnace was guaranteed an adequate
water supply by the authorising canal act (30 Geo.III
C.82), Richard Hill was soon at loggerheads with Richard
Crawshay, who held a controlling interest in the Canal
Company, and which he ran as an adjunct to the Cyfarthfa
works. Hence the legal contest that reached the Court of
Chancery by 1794. But Hill soon despaired of legal
remedies, remarking to his attorney that his opponents:19

"keep such a pack of Affidavit men that was I
under the necessity to blow out they woud Swear
I had water enough tho not a Drop scarce coming
to me--this has been nearly the Case Since
Saturday last".

Besides, any judgement or arbitration award would be
rendered obsolete by the expansion of furnace capacity at
Plymouth, and the growing demands on power which this
entailed.20 Since the law could not keep pace with the changing situation on the ground, access to the waters of the Taff was disputed by direct physical action. Locks were smashed and sluices stopped-up, the whole performance being punctuated with scuffles and fracas. In these, the Plymouth ironmaster played a leading role, to lend heart to those of his men who quailed at the might of Crawshay.

On a night in June 1794, Hill broke open the No. 3 lock on the canal in person, allegedly to speed a test case through the courts.21 In the wake of another confrontation at No. 3 lock, it was his eldest son, Richard Hill junior, who was arraigned for assaulting the lock-keeper. The keeper was, in the judgement of Hill senior, "a worthless Dog: perhaps there does not exist a worse character in the principality". Yet, as he recognised, "the Canal Co. undertake it for him, and prosecute it to give protection to their Serv.ts".22 That, precisely, was the effect of the struggle for resources at Merthyr: each of the ironmasters had his powers of leadership, patronage, and protection tested in such a way as to compact together the men and women who laboured on his behalf.23

The other zone of friction separated Dowlais and Penydarren. The two works were built in close proximity,
their tenancies sitting cheek-by-jowl along the Dowlais and Morlais brooks. Since these streams served as receptacles for the scoriae of both works, their courses were constantly shifting, sparking a series of aggressive exchanges. Moreover, the two companies were ensnared in a tangle of ambiguous leases - at Gellifailog, Gwaunfarren, and Gwernllwyn Isaf farms, but most spectacularly at Pwlywhead, wherein Dowlais held the rights to the coal, and Penydarren the mine. As the unwilling partners in an interlocking embrace, the rival works were quickly drawn into a bitter and recurrent feud.

The skirmishing at Merthyr was first brought to the notice of the wider county community in 1791. Of the causes tried at nisi prius before the Glamorgan Great Sessions in September 1791,24

"the most material was between Messrs. Guest & Taitt Plfs. and Homfray & Co. Defts, being an action of trespass, for placing Cinders Rubbish etc. out of Pendarren works upon land belonging to the Plfs".

The verdict went to Dowlais, prompting Samuel Homfray into a public avowal "that he will try whatever he can do towards taking down the Dowlais Furnaces". The Cardiff diarist who recorded this declaration found it inexplicable, for the ground being contested by Homfray and Dowlais "was not worth 6d to any person but
It could be, he thought, "no more than the effect of a gust of passion". But in the fraught atmosphere of Merthyr, Homfray's pugnacity was readily comprehensible. Certainly, it was more than a manifestation of his notoriously splenetic personality; for the Dowlais partners were equally prepared to countenance extreme measures. Robert Thompson was to suggest a striking expedient to pressurise Homfray into relinquishing the disputed spot, a strip of land between Gellifailog and Penydarren farms. Since the ground in question was defined by the course of the Dowlais brook, long choked and contorted by debris, he recommended an attempt to turn the stream towards its original channel:

"we may make weares to turn it towards the old course, and it is then their business to protect themselves; I can make a wear in three or four days in a place that is directly on our premises, that will find its own way to the Level they have drove before the Workmens Houses, fill that and all the Houses in a few hours and go into the Lower Forges if not upper ones and the Furn[ace]s".

Thompson concluded triumphantly: "in short a were would stop all their works". This was no idle threat. The proposal to wreck one of the greatest ironworks in the kingdom was canvassed quite ingenuously among the Dowlais partnership, and work on a weir was finally begun in August 1794. And to effect; as Thompson had anticipated, Homfray was forced to capitulate.
Hostilities between the two works - and their workforces --recurred, on an episodic basis, for over two decades. Any possibility of resolving the antagonism was thwarted by the speed with which a new *casus belli* could arise from the chaotic industrial landscape developing around Merthyr. Every waggon-load of debris tipped into the brook, and every new piece of plant laid down on disputed territory was a fresh provocation.

In the first years of the nineteenth century, the new forge and mill installed by the Dowlais Company in 1801-02 was the principal occasion for discord. The friction which this forge complex, built along the north bank of the Dowlais brook, opposite the Penydarren mine patches at

Overleaf - the course of the Dowlais brook as it passed the Penydarren works c.1794, pushed from its original bed by 'Cinders' and 'Mounts of Rubbish'. The 'Present Track of Dowlas Brook' is contrasted with the 'Old Boundary' between the Penydarren site and Gellifailog farm (leased by the Dowlais Company). It was this 'Old Boundary' which Robert Thompson hoped to restore by building a weir which would re-direct the stream, and flood the Penydarren works into the bargain. (*Source: GRO D/D G Plan 104*).
Work and Conflict

Pwellywhead, created had become visible in 1806, when Homfray had sought to disrupt its tramroad connection with the Dowlais furnaces. In 1809 matters reached a climax, when the Dowlais Company attempted to stop Penydarren miners from dumping rubbish in the brook, a practice which this time threatened the Dowlais forge with inundation. Josiah Guest countered the danger by throwing a brick arch over the brook to prevent the dumping, and having a culvert dug to speed the stream past his works. At Penydarren his actions were seen as an intolerable curb on a longstanding custom, and the culvert a trespass on Homfray's mine patches. As a result, David Foulkes, an under-manager at Penydarren, led a troop of workmen to demolish the culvert. He was opposed, on the night of 15/16 November 1809, by Guest, who marshalled a smaller number of his own men to repel the attack.

Since a number of the participants in the ensuing disturbance, including Josiah Guest, were later indicted for riotous assembly and assault, this incident is unique in that the testimony of several plebeian combatants was recorded.28

Thomas John Harry, a senior Dowlais miner, watched Foulkes arrive with an estimated 150 men:
"all Penydarren Workmen among whom were Sawyers, Miners, Colliers & Labourers...Some of them had Mandrelles others Picaxes & Smiths Sledges".

Evan Davies, a miner who was digging in the culvert, was first alerted by the resounding cheer of the Penydarren men as they rushed to smash down the planking:

"Immediately after they began Foulkes & his men huzza'd--& they huzza'd after they had pull'd down the fence...The Dowlais Workmen were all at that time working in the Culvert & they were forc'd to go away or they wo'd have been killd & many of them left their Cloaths in the Culvert which was cover'd by the Earth".

Jane Griffiths was also working in the culvert. According to her deposition:

"A great many Penydarren people came there & frightened her very much--they pull'd down the Culvert--the Witness rece'd a Blow fm some of the Penydarren men on her Head & was kick'd on her Leg--they used very bad Language to the Witness".

Margaret Lewis, another Dowlais miner, watched the melee from a nearby patch. The commotion drove her from her work in terror:

"She ran away & fell down--She did not faint--She was frightened & everyone ought to be so--She was afraid of her Husband's fighting She tho.t it wo'd be a Rebel--There was no Riot on the Dowlais side...She heard the Noise, the
Women tho.t Mr. Guest would be kill'd".

* * *

In summary, the struggle for local advantage in Merthyr depended on winning privileged access to raw materials and sources of power. In this, the ironmasters were prepared to use both legal and extra-legal means. The latter took the form of obstructive behaviour, if not outright sabotage, carried out by the rival workforces under the sponsorship, and sometimes active leadership of their ironmasters. This established a pattern of incursion and retaliation, with the effect of enforcing a closer identification between the ironmaster and the mass of his workers, who were otherwise divided among a welter of work gangs.

Although these confrontations were most frequently enacted on the mine patches and scouring fields, their effects were generalised beyond the ranks of miners and colliers. For one thing, the disputes could be escalated to the point where they threatened the functioning of an entire ironworks. Of more immediate pertinence perhaps, was the chaotic distribution of mineral excavations at Merthyr.
There was no spatial separation between the extraction of raw materials and the making of iron. The precincts of the ironworks were themselves warrened for coal, mine, or sand. This circumstance made possible attacks such as that in February 1810, when Penydarren miners sent barrow loads of debris crashing through the roof of the 'sand stove' at Dowlais.29 This was no rough-and-ready miners' shack on the margins of the Dowlais enterprise, it was a building of sophisticated design, fitted with under-floor heating to dry sand for the casthouses and moulding shops.

These contentions crystallised at an early date into a structure of tension and antagonism into which the workman or -woman was locked as an unavoidable corollary of their employment. From this perspective, the loyalties and allegiances shown to one ironworks or another can be understood, regardless of a rate of labour mobility that would seem to rule out the effective deployment of paternalist devices.

* * *

The presentation in this, and the foregoing chapters, has been concerned with the elucidation of management structures, and their interaction with actual working
practices. It has been necessary to give an extended
treatment of the problem because, in the first place, the
apparent centrality of an well-rooted managerial stratum
was vitiated by the bewildering variety of subcontracting
arrangements which clothed the performance of work. One
of the effects of this was to render management less
visible. Subcontracting was not only a way of 'evading
management', it was also an encouragement to ironmasters
and their managers to talk of managerial conundrums as
technical problems: the roundabout nature of their control
over the deployment of labour in mineral excavation was,
for example, translated into complaints about the
fluctuating level of limestone stocks, or some similar,
deceptively neutral, irregularity. It is these hidden
aspects of labour control that call for scrupulous
attention when any attempt is made to disinter the net of
contracts and 'bargains' which covered work.

It would be mistaken, however, to view the exercise of
authority in Merthyr's giant ironworks as no more than the
sum of so many formal agreements, linking together
different areas of the productive process. The conduct of
work was also influenced by certain expectations and
cultural idioms, peculiar to the iron trade, which were
recognised by both the ironmasters and their workers.
Their importance cannot be appreciated without extending
this analysis beyond day-to-day affairs at Merthyr, to take in the iron trade in some of its national aspects. The inadequacy of scrutinising the internal regimes at each of the ironworks in isolation has become apparent in other ways. As this last chapter has demonstrated, it is the violent interaction of the rival works which must be grasped, if the development of early industrial Merthyr as an urban community is to be fully appreciated.

Parts II and III of this thesis take their cue from the points raised here. Part II examines the ways in which the Merthyr ironmasters identified and pursued their objectives as industrialists in South Wales. In particular, it focuses on their efforts to draw strength from the wider community of the iron trade, of which they felt themselves to be part. Part III gives further consideration to the interconnections between developments in the iron industry and the formation of Merthyr's urban and political character.
Endnotes to Chapter Six

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1 GRO D/D G 1803 R-W fo.713, W. Taitt to T. Guest, 1 September 1803.

2 Williams, Merthyr Rising, p.52.

3 Manners, Journal, p.66.


5 GRO D/D G 1801 B-T fo.443, L. Morgan to ?T. Guest, 26 January 1801.

6 GRO D/D G 1804 A-W fo.83, L. Morgan to W. Taitt, 6 April 1804.

7 See C. Fisher, Custom, Work and Market Capitalism: The Forest of Dean Colliers, 1788-1888 (1981), pp.65-71. For a very rare enumeration of a mining gang, see GRO D/D G 1817 (1) W fo.312, L. Williams to ?, 10 July 1817: "I have Cleared off a piece of Top ground, in a Mine patch at Peny van, myself and five Men for five days past".

8 GRO D/D G 1814 A-P fo.57, R. Francis to J.J. Guest, 28 February 1814.

9 PRO E 112/2094/75.

10 GloR D1086/F116, W. Lewis to J. Blagden Hale, 12 March 1785.
In their answer to Hill's bill of complaint, the proprietors of the Canal Company conceded virtually all his points, but insisted that he had brought trouble on his own head by building, since 1790, a second, and, at the time of writing in July 1801, a third furnace at Plymouth. PRO C 13/2394/Hill vs. Glamorgan Canal Navigation.
21 NLW Maybery 2482, R. Hill to J. Powell, 25 June 1794.

22 NLW Maybery 2490, R. Hill to W. & J. Powell, 20 January 1795.


24 CCL MS. 2.716(1/3) fo.23, 9 September 1791.

25 CCL MS. 2.716(1/3) fo.31. 22 August 1793.


27 GRO D/D G Section B, Box 8, memorandum dated 18 July 1794; GRO D/D G 1794 T-W fo.228, W. Taitt to R. Thompson, 18 August 1794.

28 Various depositions are stored in GRO Q/SR 1810 A (unsorted). Also, GRO Q/SI 5/1197 for the indictment of Josiah Guest, Thomas John Harry and Evan Evans; GRO D/D G 1809 letterbooks passim. See also GRO D/D G Plan 217, (plan of land boundaries and the course of Dowlais brook near Dowlais Forge).

29 NLW Maybery 144, affidavit of J.J. Guest, dated 28 February 1810. That the Penydarren miners should have been able to tip their rubbish onto the roof of the sand stove speaks volumes about the topsy-turvy landscape of industrial Merthyr.
Chapter Seven

The Merthyr Ironmasters in Local and National Context

The first generation of Merthyr ironmasters were all interlopers in South Wales. They quickly established themselves as prosperous industrialists; but as outsiders, they were faced with the problem of gaining entry to the networks of local political influence that could buttress one's standing and which were essential to command respectfull Attention:

PART II

"strength to command respectfull Attention":

The Merthyr Ironmasters in Local and National Context

Firstly, there is the question of the extent to which the ironmasters were inducted into, or were dependent upon the established pattern of dynastic politics which characterised south-east Wales. The second area of discussion concerns the alignment of the ironmasters with a particular constituency within the gentry community, one committed to the systematic 'improvement' of husbandry and manufactures in Glamorgan. Yet there is, as well, a somewhat different issue to be considered: that is, the involvement of the Merthyr ironmasters in a specifically industrial lobby - that of the iron trade organised as a federation of regional blocs, and geared to preserving fiscal or trading policies favourable to the industry. To itemise these approaches in this way is not to suggest that the ironmasters knew three distinct planes of activity.
The first generation of Merthyr ironmasters were all interlopers in South Wales. They quickly established themselves as prosperous industrialists; but as outsiders, they were faced with the problem of gaining entry to the networks of local political influence that could buttress and protect their prosperity. Of the avenues which were open to the ironmasters, there are two which merit detailed investigation.

Firstly, there is the question of the extent to which the ironmasters were inducted into, or were dependent upon the established pattern of dynastic politics which characterised south-east Wales. The second area of discussion concerns the alignment of the ironmasters with a particular constituency within the gentry community, one committed to the systematic 'improvement' of husbandry and manufactures in Glamorgan. Yet there is, as well, a somewhat different issue to be considered: that is, the involvement of the Merthyr ironmasters in a specifically industrial lobby - that of the iron trade organised as a federation of regional blocs, and geared to preserving fiscal or trading policies favourable to the industry. To itemise these approaches in this way is not to suggest that the ironmasters knew three distinct planes of activity.
In practice, they drew upon all their varied resources, and sought to combine them in the most efficacious blend. As a concrete illustration of how a strategic path was mapped out, the succeeding chapter will analyse the progress and vicissitudes of one piece of legislation that was devised and sponsored by the ironmasters of South Wales in 1800 - the 'Act for the Security of Collieries and Mines, and for the Better Regulation of Colliers and Miners'.

* * *

In July 1797 the 'four Companies of Ironmasters' dined together at the Star Inn, Merthyr. William Lewis of the Dowlais Company took the chair, and seized the opportunity of saying:\1

"what a lamentable & shameful thing it was to have such frequent disputes, & Lawsuits with each other, and that the whole Country said, we were getting Money so fast we did not know what to do with it except we spent it in Law—I proposed a bumper to Peace and good Neighbourhood".

This gathering of 'brother' ironmasters was one manifestation of the strong corporate sentiment that prevailed in the iron trade. On the other hand, William Lewis's speech is indicative of the degree to which the
The Ironmasters

brotherhood was composed of strong-willed individuals and riven by jealousies. The substantive material issues that provoked the perennial inter-works feuding have been examined already, and there can be no doubt that the struggles for mineral resources and water power that beset the district would have roused those of the most saintly disposition. And the Merthyr ironmasters were no saints. On the whole they were abrasive and unyielding in temperament, and quite uninhibited in adding personal rancour to commercial rivalry. Indeed, their personal idiosyncrasies merit some discussion, for they were by no means irrelevant to local affairs.

The outstanding personality was, without question, Richard Crawshay - 'Moloch the Iron King'.\(^2\) Crawshay was a rough-hewn, Smilesian hero: a self-made man of unquenchable energy and indomitable egotism. He was, as he said himself, possessed by "an Active something within that will not let me play truant for long".\(^3\) Passionate in his commitments, he could brook no opposition, as he demonstrated with rather comic effect in 1799, during one of the trials between Richard Hill and the Canal Company. John Bird, the Cardiff diarist, recorded the scene.\(^4\)
"Mr. Crawshay was in Court the greatest part of the time and could hardly be restrained from speaking—At one time he got up and asked the Witness then under examination—"Do we choke the River, or do the River Choke us"—which threw the Court into a burst of laughter—He was Cautioned not to speak but by his Council, and which with difficulty he complied with".

The ironmaster of Cyfarthfa felt himself to be impeded everywhere by men of lesser drive and inferior vision. What was worse, as he explained to William Pitt during the commercial crisis of 1793, was that since his "Scale in Life from Industry is become a Large one...I am not free from envy and Malignant Minds". Indeed, his blunt single-mindedness did little to endear him to his neighbours. To Richard Hill he was the 'Tyrant', to Samuel Homfray a "damned Scoundrel". His relations with Jeremiah Homfray were always fragile, or so Gilbert Gilpin had it: they could "scarcely ever leave their cups without quarrelling, & frequently are nearly getting to blows. They are at law one day & in a coach together the next". Crawshay's differences with his son William (1764-1834) became the stuff of legend. Again, it was Gilpin who discovered them in a memorable sulk:

"They would not sit in the same room together— the young one however kept possession of the parlour, & the old gent took possession of the counting house & the business they were about was transacted by letters sent from the old Crawshay in the counting house to the young one in the parlour & vice versa".
As Justice Hardinge, who was on good terms with the 'old gent', conceded, Crawshay was "overbearing in his manners & more unfortunately at variance in general with Mr. [Samuel] Homfray & with several others who are embarked in the same class of trade".9

Samuel Homfray was a younger, but no less formidable figure. Hardinge gave this assessment of his character:10

"Mr. Homfray of Merthyr who has many good points in him is...from an obstinacy of temper & roughness of manners[, and] a want of address and judgement in the affairs of men[,] a very dangerous person for those who are connected with him and for others".

He was, in more ways than one, governed by his passions. His temper was explosive and vengeful, his tongue uncontrollably abusive, and his disposition libidinous.11 Samuel Homfray's enemies were numerous. A good many of them, not surprisingly, were congregated at Dowlais, where William Taitt reacted with undisguised joy to the prospect of the Penydarren ironmaster being jailed, in the wake of the 'riot' of November 1809. ("I trust the Rascal will meet his deserts at last").12 But Homfray was also estranged from Jeremiah, his brother and erstwhile partner, who grew weary of his "Heauteur language... ridicule & defiance".13
If the ironmasters gave the impression of a fractious brotherhood, absorbed in their own squabbles, it was only fitting, for they were closely allied by marriage. At Dowlais, the Guest-Taitt nexus was, of course, the foundation of the Company's proprietorial continuity. At Cyfarthfa, under Anthony Bacon's regime, Richard Hill had cemented his position as agent by his marriage to Mary Bushby, the sister of Bacon's common-law wife. Robert Thompson, brought to Merthyr by Crawshay to keep the books at Cyfarthfa, married his master's sister before defecting to Dowlais.14 Crawshay's grandson, William junior (1788-1867), married into the Homfrays in 1808.15 Other members of the Crawshay clan moved along the rim of the coalfield to fertilise neighbouring centres of iron production. Richard's nephew, Joseph Bailey (1783-1858), for example, found a wife with the Lathams of Ebbw Vale.16

This tightly-intermeshed network of ironmasters was far from inward looking. Their dominance at Merthyr provided the basis for a more extended impact, and in their great wealth they possessed an indispensable means of purchase on wider society. Hardinge judged Samuel Homfray to be "extremely opulent". Gilpin concurred: "It is said no nobleman in South Wales lives in such stile as S.H.".17 As for Crawshay, Hardinge scarcely knew how to broach the subject of his riches. "I have not the courage to name
his wealth least it shd seem to be exaggerated", he told
the Duke of Portland, "Your Grace may have heard of it &
of him". By the time of his death, Crawshay's property
was thought to be incalculably immense. One recent
estimate of his estate is £1.5 million. Whatever its true
dimensions, it is telling that his notion of disinheriting
his son William was to bequeath him a mere £100,000.

The Merthyr ironmasters were, then, men of substantial
property. As such, it was natural that they should be
admitted to the functions of power and authority incumbent
upon men of property. The foremost of these was
membership of the commission of the peace. Indeed, the
qualification of the ironmasters as justices of the peace
was a pressing necessity in view of the acute shortage of
resident magistrates in the Glamorgan Hills. According to
a recent calculation by Dr. Philip Jenkins, that vast
portion of the county accounted for only three of the
ninety-seven justices on the 1762 commission. In the
second half of the eighteenth century the imbalance became
insupportable, as the under-staffed mountain parishes
experienced an unprecedented influx of population.

By the start of the 1790s, the flimsiness of judicial
administration in the area was keenly felt. A growing
sense of emergency, together with the shedding of the
bench's social exclusivity (observable throughout the eighteenth century), was reflected in the new commission of the peace in 1793. With it, the ironmasters moved into the magistracy en bloc: Richard Crawshay, Taitt and Lewis of Dowlais, the Richard Hills, pere et fils, and the Homfray brothers all qualified. That hurdle surmounted, the ironmasters found themselves liable to appointment as sheriff for the county, and several served in that capacity. Shrievalty required that its holders should be men of substance and respectability, but the prestige attached to the office was more than offset by its onerous duties. The great gentry families had evaded the burden with increasing success in the eighteenth century, and the frequency with which ironmasters were appointed should be set against the withdrawal by the county elite.

The ironmasters moved easily among the lesser gentry of Glamorgan and the professional middle-class families that congregated in the region's small urban centres, with whom they soon established ties of blood. Crawshay urged his eldest daughter, Ann, to consider the blessings of a connection with the Bolds of Brecon, bankers, attorneys, agents to Lord Dynevor, and busy in corporation politics. She set her face against the match, perhaps with prescience, since she soon after found a husband with the Franklens of Clemenstone, a gentry family of growing
Ann's sister, Charlotte Crawshay, married Benjamin Hall (1778-1817), the son of an important clerical bureaucrat at Llandaff. Hall entered parliament in 1806 as M.P. for Totnes, and in 1814 he captured the Glamorgan county seat in a notable coup. Jeremiah Homfray took his bride from the Richards, another Llandaff family of gentility. But it was his brother Samuel who made the plum match, when, in 1793, he married one of the daughters of Sir Charles Morgan of Tredegar, and by so doing allied himself to the most important landowner in south-east Wales.

As these examples suggest, the ironmasters found a ready entry to local society. They were to be found as stewards at the Swansea races; they were in attendance at balls and assemblies in Cardiff, Swansea and Brecon; they indulged in the slaughter of game birds on the Hills - the hallmark of gentlemanly status. The extent to which they reproduced the style of landed society varied, of course, according to personal inclination. Samuel Homfray tended towards extravagance, and mimicked the grandeur of the Morgans:

"His carriage is the most elegant, & daubed all over with armorial bearings, of which he has got a pretty good collection since his marriage into the Tredegar family. He cannot ride into Merthyr without having two livery servants perched up behind, turned up with yellow &
silvered just like the doughy kings and queens which we frequently see on a gingerbread stand".

Alone of the early Merthyr ironmasters, Homfray converted his residence into a mansion, "finishd with great Elegance & Taste with useful & ornamental Buildings & every other appearance of Gentleman of Fortunes Residence" - much to the despair of his brother Jeremiah, who watched the transformation with a foreboding worthy of his old testament namesake. Such ostentation was not emulated by Thomas Guest of Dowlais, a colourless Methodist lay preacher. Richard Crawshay, no friend to Methodism, differed in other ways. He gloriéd in being an "unpolish'd Fellow", and took a perverse pride in his humble antecedents. Gilpin recorded Crawshay's riposte to Homfray's airs:

"Poor old C, nor any of his family, ever had a coat of arms, and as a substitute he has got a number of dogs painted upon different parts of his carriage, emblematic of perseverance".

*   *   *

While it can be said that the ironmasters did not exist in hermetic isolation from the established founts of power and prestige, there is little that has been settled conclusively. A bare handful of significant marriage
settlements can be displayed, but for every daughter of an ironmaster who bore her portion to the Vale gentry, there was another who delivered hers to the counting house of a Bristol merchant. Equally, an examination of the manners and mores of the ironmasters uncovers some points of interest, but ultimately reveals a pattern of such diversity as to betray no sure meaning. They were a small group of individuals; so small as to defy statistical manipulation or sweeping generalisation.

However, situating the ironmasters in Glamorgan society does not depend on comparing styles of consumption. Indeed, there is a point at which the distinction between the new industrialists and the established gentry becomes unreal. Some of the greatest gentry magnates were already seasoned industrialists when the Merthyr works were in their infancy. The Mackworths and the Mansells, two of the county's leading families, were conspicuous entrepreneurs in coal, copper, and tinplate. In this environment, the ironmasters had every reason to expect ready allies in removing impediments to profitability. Apart from anything else, they were the tenants of some of the most powerful men in the region - Lords Bute, Dynevor and Plymouth.
Relations between landlord and tenant were not bound to be harmonious, but on the whole the greater the prosperity of the ironworks, the greater the royalties the landlord could expect, together with a range of ancillary benefits, flowing from an expanded local market for timber, building stone, and agricultural produce. Given this relationship, the ironmasters could legitimately hope that their aristocratic landlords would exert themselves on their behalf. Thus, Crawshay applied to Lord Dynevor, the landlord of the Cyfarthfa works, to intercede with government when a duty on the carriage of stone, slate and marble by sea was proposed in 1794.\textsuperscript{31} In turn, the accelerating pace of economic development also afforded lucrative investment opportunities to the traditional leaders of Glamorgan society, opportunities which they were not slow to take up. A "very respectable body of gentlemen" attended the launch of the Glamorgan Canal Navigation during the 'canal mania' of the early 1790s, and subscribed heavily to the new company: the Marquis of Bute, Lord Plymouth and John Kemys-Tynte of Cefn Mably each pledged £5,000.\textsuperscript{32}

In his study of the Glamorgan gentry, Dr. Jenkins has asserted that, by the second half of the eighteenth century, the enterprise of one section of the landed class amounted to more than "simply following the traditional
opportunism of the county community, 'improving' to meet the needs of industrial advance", it signified adherence to an 'ideology' of improvement. The key components of this ideology were a self-conscious promotion of economic development, together with an alertness to innovation and a commitment to its diffusion. Its tenets were best exemplified by John Franklen, the founder of the county's Agricultural Society (1772). Franklen was an energetic propagandist on behalf of new techniques in husbandry, and a promoter of land reclamation and turnpike schemes. His eldest son was to be the husband of Crawshay's eldest daughter.

These projects were entirely congruent with the entrepreneurial thrust of the ironmasters, who, quite apart from anything else, were painfully conscious of the need for a plentiful supply of provisions at the new industrial centres in the Hills. The Merthyr ironmasters were themselves active farmers, driving cultivation far up the mountainsides. At Dowlais, equal deliberation was given to the appointment of the farm bailiff as to a colliery superintendent, and the Company was affiliated to the county Agricultural Society. But it was Richard Crawshay who was most deeply implicated in the 'ideology of improvement'. His enthusiasm for novel and imaginative enterprise, evident in every aspect of his life, was
heightened by the multiple crises of the 1790s, which convinced him of the need for a far-reaching reformation of agricultural practice. He began to amass the publications of the influential 'Bath & West of England Agricultural Society', and opened a correspondence with Sir John Sinclair, the President of the Board of Agriculture. Over the winter of 1795-96, after successive harvest shortfalls, he joined in the campaign for a general enclosure bill. This was a pet scheme of the Board, and Crawshay must have been one of its busiest provincial advocates. It was he who proposed a motion in its favour at a meeting of county magistrates in November 1795 - where it passed without demur - and he who canvassed extensively in its favour throughout South Wales.35 Crawshay was also a member of the Society of Arts, and on the eve of his seventieth birthday, he was still to found at the Glamorgan quarter sessions publicising the need for the domestic cultivation of hemp, one of the experimental projects recommended by the Society.36

The convergence of interests between the ironmasters and 'improving' landowners was most strikingly instanced by the Bridgend Woollen Manufactory. John Franklen first mooted the establishment of a Glamorgan woollen industry to consume locally-produced fleeces, at a meeting of the
Agricultural Society in 1790. On his initiative, the latest spinning and carding machinery, specially procured in the north of England, was put on public display in Bridgend town hall, while subscriptions were solicited. When the factory was opened in 1792 it was claimed as the largest textile works in Wales, employing about a hundred workers under one roof. It was rated as "one of the completest Manufacturies in the Kingdom [which] People have crossed the Seas to see". It is of particular interest in that it was clearly strategic rather than opportunistic in character. That is to say, it was consciously geared towards effecting a structural shift in the local economy to diversification and technological modernity.

The list of proprietors makes instructive reading. Among those who contributed to the £5,000 capital were Richard Crawshay (£200) and Richard Hill (£100). They were in exalted company. Heading the subscription with £500 was Thomas Wyndham, Glamorgan's M.P. He was followed by two of the county's richest squires: Richard Jones of Fonmon Castle, with over 9,000 acres in the lush Vale of Glamorgan (£100), and Thomas Mansell-Talbot of Margam (£200). There were other representatives from established gentry lines, including the Deeres, the Carnes, and the Kemyses, as well as from newer families in the county.
community. Very often, the latter owed their newly found distinction to their espousal of 'improvement'. John Franklen (£200) was a case in point. So was Hopkin Llewellyn (£100), the feared and powerful steward on Mansell-Talbot's Margam estate.39

The commitment of this "patriotic combination of the Gentlemen of the County" to economic 'improvement' which was longterm and developmental in character, was confirmed, ironically, by the commercial failure of the project. The weakness of the firm, suggested one thoughtful observer, lay in "engaging at once in too multifarious branches of manufacture", a conclusion which implied that diversification and sophistication were foremost in the minds of its backers, perhaps to an excessive degree.40

However, if there was a broadly consensual advocacy of 'improvement' in which the ironmasters could participate, this overlaid entrenched political divisions in South Wales. It remains to be seen how the Merthyr ironmasters apportioned their loyalties within this context.

* * *
In general they were conservatives, Anglican in their worship and Tory in their sympathies. John Guest may have taken the Cambridge Intelligencer, the newsheet published by the Unitarian radical Benjamin Flower, but whatever reformist tendencies existed at Dowlais died with him, in the 1780s. Taitt and Lewis, the dominant voices in the three succeeding decades, were united in their Toryism. William Lewis was deeply implicated in the Tory circles of Gloucestershire, bulwarks of power to the dukes of Beaufort, whose sway extended far into Monmouthshire and Glamorgan. Like his brother-in-law John Blagden Hale of Alderley, deep in the Cotswolds heartland of the Beauforts, Lewis was proud to be a "staunch Duke's Man". Taitt was equally firm in his loyalties, joining in the reverential toasts at his Pitt Club. For the most part, he was resident in the Tory centre of Cardiff, and became a burgess of the town in 1792.

 Appropriately enough, the affiliations of Samuel Homfray were diametrically opposed to those of Dowlais. His marriage to Jane Morgan had drawn him into the orbit of Tredegar House, whence the Morgans, the traditional Whig antagonists of the Beauforts, wielded a colossal regional power. In the late eighteenth century, the Morgans dominated Brecon, county and borough, shared the representation of Monmouthshire in an uneasy compromise.
with the Beauforts, and had no small voice in the complex politics of Glamorgan. Homfray soon proved a willing activist in their service. His crucial absence from Merthyr during the riots of September 1800 was due to his attendance at Brecon for the election of the borough bailiff. In 1801, when his father-in-law's elevation to the peerage seemed probable, Homfray was groomed to take the borough seat at Brecon in the general reshuffle of the Tredegar interest that would have to ensue. Sir Charles Morgan's ennoblement did not materialise, but his untimely death in 1806 left the Breconshire seat open when there was no immediately suitable Tredegar candidate to hand. Homfray was selected to canvass the county, but the ironmaster was evidently not considered suitable to receive the endorsement of the Morgans in so prestigious a vacancy. As a contest was threatened, the Tredegar managers preferred to withdraw Homfray's candidature and reach a modus vivendi with the rival contender.

Richard Crawshay did not involve himself in the dynastic politics of South Wales in the same way. He had already established a reliable network of political contacts in London before moving to South Wales in the 1790s. He had by then some years of experience in the ways of lobbying for a variety of mercantile and manufacturing causes. No doubt it was this that encouraged him to address himself
directly to ministers. Ever hopeful, he was always ready to fire off missives to London, anticipating quick results. His favoured recipient was Lord Hawkesbury, (later the first Lord Liverpool), the President of the Board of Trade, but he was not afraid to approach William Pitt directly. As to his political persuasions, Crawshay seems to have adhered to the reformism of Pitt's ministry in the 1780s, before following the premier into the camp of counter-revolution. In the 1790s, he was grandiloquent in his loyalism, despite his friendship with the francophile ironmaster John Wilkinson. Writing to William Wilberforce in 1795, he hailed "our Friend Mr. Pitt" as "the Saviour under God of the Nation". His personal preferences tended, then, toward support for the ministry and the Established Church, but on the whole his practical enthusiasms were not to be constrained within the existing categories of dynastic politics.

* * *

Richard Crawshay's talents were better suited to another form of politics - the corporate politics of the iron trade. The "prevalence of [masters']] combinations" was long ago identified as a "striking feature of economic life in the eighteenth century". And the iron industry provided an outstanding example of informal association
between producers. By the early eighteenth century, the British iron industry was dominated by sprawling, federated family partnerships, which strove to minimise competition among domestic producers, and voice complaints about the volume of Swedish or Russian iron imports. A consciousness of the iron trade as an 'interest' was, then, deeply embedded in the industry, and with it a familiarity with collective organisation and concerted action.

This corporatism was taken on wholesale by the greatly expanded coke-smelting iron industry. It was embodied in "the common principles & customs of the Trade" which the Merthyr ironmasters periodically invoked, usually when they were about to flout them. Indeed, if anything, the corporatism of the trade was accentuated, for by the late eighteenth century the industry was highly organised in a number of regional blocs. The ironmasters assembled in regional quarterly meetings at which price lists were set and future strategy debated - whether prices should be raised in an attempt to maximise revenue, or restrained so as to realise the long-cherished aim of excluding Baltic iron from the British market.

International rivalries were only one element in the reckoning. The various quarterly meetings also expressed
inter-regional jealousies. Each faction within the national iron industry jockeyed for a pricing policy that would best suit its own strengths. In the 1780s, the Welsh makers waited on the decisions taken by the Midland ironmasters, meeting at Stourbridge. At their own assemblies, convened at Newport from 1802, the Welsh ironmasters brooded on the decisions taken by their brethren in Shropshire and Staffordshire, and amended their lists accordingly. However, the distribution of power within the trade was not fixed; there was a shifting balance of forces reflecting the fortunes of the different iron-making districts. In the quarter century after 1790, this implied a waxing of South Walian influence and power, and the disintegration of the hegemony of Shropshire.

The great ironmasters of South Wales sought a tight regulation of the market by large producers after their own image. Josiah Guest blamed the under-capitalised works of Staffordshire for the severity of the 1816 slump; they lacked the resources to withstand a sustained deflation, and so dragged the whole trade into ruinous price wars. Gilbert Gilpin agreed: "Most of the Trade there are needy adventurers and cannot stand the winding up of their accounts". At Merthyr, accumulated revenues enabled the masters to ride out the worst of the convulsions that afflicted other areas. The policy at
Cyfarthfa was to keep prices high and stockpile iron for which there was no market, relying on the vast financial reserves of the Crawshays' London house. From the Midlands came charges that the the South Walians exploited such crises to buttress their advantage. In Shropshire in 1816 there were cries of despair over "the shutting up of the Ironworks &c and it is said here that you Myrthyr Gentlemen can & will prevent their ever opening again". The suspicion was well founded. As markets revived in 1817, the South Walians considered an advance in their prices, large enough to boost their own receipts, but of a size that would "not electrify Staffordshire".

The internal politics of the iron trade was, then, a complex and often contradictory process. All of the Merthyr ironmasters were involved in the politicking to some extent, and some of them cut a conspicuous figure. William Taitt, for example, dashed to London in the spring of 1806 to serve as the representative of South Wales on the committee which directed the lobby against the tax on pig iron then being proposed by government. This was one of the most extensive and determined campaigns ever undertaken by the trade. It was triumphantly successful, and conferred enormous prestige on Taitt. But not even he could claim so deep or so vocal an involvement in the affairs of the trade as Richard Crawshay.
The Cyfarthfa ironmaster was a figure of national stature, who conceived of the trade as a genuinely national body, to be spoken of with a proper sense of corporate pride and identity. His correspondence took in every other British ironmaster of repute, as well as figures of international renown, such as Count von Reden, industrial adjutant to Frederick the Great. Unlike the Homfrays or the Guests, Crawshay had no family background in the iron industry, and it was perhaps for that reason that he articulated the protocols of the trade with an uncommonly explicit reverence. By the mid-1790s he had a portrait painter criss-crossing Britain to get him likenesses of the foremost ironmasters in the country, and it was their mundane features that adorned the parlour walls at Cyfarthfa. Many of them were enticed to Merthyr in person to admire his endeavours. William Lewis recorded the attendance at one such rendezvous in June 1790:

"Merthir is the Place, I dined Wednesday with the greatest Ironmasters in this Kingdom Vizt Mr. John & Wm Wilkinsons, Mr. Reynolds of the Dale, Mr. Crawshay Cockshutt, Priestly, & last not least in his way Lord Dondonold..."

Lewis was correct in his estimation; it was an illustrious gathering, which included two of Crawshay's particular cronies, William Reynolds of Ketley, and John Wilkinson.
William Reynolds (1758-1803) was, in the 1790s, the foremost Shropshire ironmaster. An irrepressible enthusiast for innovation and scientific investigation, Reynolds would have been more widely recognised as a luminary of late eighteenth-century provincial intellectualism had he been resident in Birmingham or Derby. John Wilkinson was a man of an altogether different stamp. He could truly be said to be a titan of the trade, with major ironworks at Bersham in Denbighshire, Willey in Shropshire, and Bradley in Staffordshire. His conceit was correspondingly massive. According to Gilbert Gilpin, he had envisaged himself as the "colossus (his words) at whose feet the ironmasters of futurity were to do homage in chains". Wilkinson provoked widely differing reactions, but never indifference. "I do believe him to be one of the most hard hearted, malevolent Old Scoundrels now existing in Britain", wrote Lord Dundonald in 1800, expressing a widely held opinion. By that date, Wilkinson had alienated most of closest business associates - his brother William, his chief clerk Gilbert Gilpin, and Matthew Boulton and James Watt, who had once placed an exclusive reliance on him for the casting of their steam engine cylinders. Yet he had his partisans too. His brother-in-law Dr. Joseph Priestley was one; Richard
Crawshay, who seems to have deferred to that *rara avis*, his superior in bombast, was another.\(^6\)

Crawshay's attentiveness to the interests of the iron trade is best demonstrated by his involvement with a small dispute in South Wales which he sought to convert into an issue of concern to ironmasters the length and breadth of Britain. In 1791, Samuel Glover, the proprietor of the Abercarne ironworks in Monmouthshire, was locked in disagreement with the parish vestrymen of Mynyddislwyn, over the levying of parish rates on his furnaces. The same issue had already caused friction between ironmasters and parishioners at Merthyr. It was, Crawshay opined, "a question as tender as that of impress.\(^8\) Seamen",\(^6\) and he determined to prompt a wider discussion of the problem within the iron trade, and the metallurgical industries generally. Accordingly, he asked John Wilkinson to raise Glover's difficulties at the Stourbridge quarter day then imminent, taking special care to apprise William Reynolds of the details.\(^6\)

In January 1792 Crawshay pushed matters forward. He now feared Glover and the parish would reach a compromise and so defer the definitive legal judgement on which he was now intent. In conference with Wilkinson and Thomas Williams, the Anglesey copper monopolist, at the latter's
The Ironmasters

London office, Crawshay elaborated a detailed plan of action. If, as seemed likely, the Mynyddislwyn rate was confirmed at the Monmouthshire quarter sessions, "the matter must be removed by a writ of Certiorari to the Kings Bench & try'd at Westminster". Advertisements in the public prints would then summon all interested manufacturers to a meeting in London, and a subscription would be opened to defray the costs of the case.

If the "Argument in our favour is not sufficiently explained for the Jury to find for us", Crawshay announced, the time would have come to apply to Parliament for a legislative resolution of the problem - an act setting limits on the liability of industrial premises to parochial charges. Every effort would then be made to marshal the "strength to command respectfull Attention". If necessary a grand alliance of metal manufactures would be formed: "the Copper, Tin, Lead, Iron, &c &c are equally involv'd in the Question...surely all our Force will have weight to prevent Gov.'t killing the Capon by eating the Egg".

The issue of rating Glover's furnaces disappeared from Crawshay's letterbook as suddenly as it arose. Presumably a solution of some sort, perhaps the feared compromise, was achieved, so as to obviate the need for a grand
Nevertheless, the episode reveals the workings of a particular cast of mind. A local dispute was seized upon as paradigmatic of the petty impositions which, in Crawshay's eyes, cramped industry. Wilkinson and Thomas Williams, two of the leading industrialists in the country, and both at the height of their powers, were recruited to prosecute the case. This imposing triumvirate mapped out a course of remorseless escalation through the courts, and ultimately to Westminster, all the time seeking to broaden the basis of support in the wider manufacturing community.

Crawshay's forays into questions of national policy are by no means so well documented as his crusade against the hapless vestrymen of Mynyddislwyn. But they were none the less significant for that. They reveal Crawshay, the most powerful of the Merthyr ironmasters, as a commanding national figure. And if his tactics cannot be reconstructed in such detail, certain of his characteristic precepts and priorities are displayed.

Crawshay's first noteworthy intervention as a lobbyist in a national arena came in the debate on British commercial policy following the loss of the American colonies. He was one of three London merchants deputed to wait on Pitt and seek the repeal of the 1786 Tool Act (26 Geo.III...
The Tool Act, as part of a wider programme of trade liberalisation, distinguished between implements that might be freely exported, and those tools and machines whose use in the hands of foreign producers would prove injurious to British manufacturers. At the urging of the 'Commercial Committee' of Birmingham, the list of articles whose export was prohibited included a good many tools used in metal manufactures. Crawshay and other London iron merchants were concerned that their ability to export certain iron implements was unjustly impaired, sacrificed to the interests of the Midlanders. Here, Crawshay locked horns with the redoubtable Samuel Garbett, the prime mover behind the Birmingham Committee, and on this occasion he was worsted. Garbett gave this sly and damaging characterisation of his opponent:

"The principal person applying for the Exportation is a mr. Crawshay of Pouels Wharf, he is a Factor and Exporter of some Iron Castings, but his chief trade is the Importation of Russia & Swedish Barr Iron, which it need not be observed, is in opposition to the English trade, and as he is so sanguine for a matter so unimportant in itself, it leads us to conjecture he may have some future designes in his Foreign connexions..."

Crawshay's supplications were in vain. Even in the confused and shifting configuration of commercial interest groups in the 1780s, the proposition to expose Britain's vaunted hardware manufacture to foreign competition found few backers. Crawshay continued to press for the Tool
Act's abrogation for several years afterwards, but he was decisively rebuffed.70

Although Crawshay's hopes had been disappointed, and although he might be said to have acted more in his capacity as a London ironware merchant than as a South Walian ironmaster, the controversy over the Tool Act did reveal certain of his favoured policy initiatives. The first of these was a theoretical commitment to unimpeded commerce. To employ one of his own, typically pungent formulations:71

"Trade Generaly is best unrestricted by Statutes[,] those who promote them are as frequently interested as Men who take out Patents for a Sh-te house or Steam Engine".

A corollary of this was a suspicion of the hardware manufacturing caucus - "a Birmingham Presbiterian junto"72 - which he suspected would endorse the free export of its own manufactured goods, but seek to hinder the free passage of iron, copper, and other basic materials to foreign markets.

However, all sectors of industry could join in opposing the raising of revenue on the raw materials of manufacture. This was threatened in 1797, when Pitt decided to impose a tax of twenty shillings per ton on pig
iron, and to alter the tax on coal from a levy on cargoes carried by sea to a levy at the pit head. The first response came from Boulton and Watt, who circularised the leading ironmasters and manufacturers. But two other men were chosen to wait on the minister. The first was William Gibbons, a Bristol iron merchant and a scion of a family of west Midlands ironmasters, who was a veteran of earlier campaigns. The second was Richard Crawshay. The appointment was a tribute to the status which the Cyfarthfa ironmaster had attained in the industry.\textsuperscript{73}

The success of the 1797 lobby which Gibbons and Crawshay conducted was, in turn, a measure of the iron trade's capacity for self-organisation and political exertion. Shortly afterwards, the South Wales ironmasters were to test their own regional prowess, when they made an "application to Parliament, for amending the Laws, respecting Colliers and Miners".
Endnotes to Chapter Seven

The Ironmasters in Local and National Context


3. GwRO D2.162 fo.47, RC to W. Stevens, 13 August 1789.

4. CCL MS. 2.716(2/3) fo.90, 8 August 1799.

5. GwRO D2.162 fo.133, RC to W. Pitt, 30 April 1793.


7. SRO 1781/6/21, G. Gilpin to W. Wilkinson, 10 October 1796.


10. PRO HO 42/61 fo.527, G. Hardinge to Duke of Portland, 11 April 1801.

11. In 1797 Gilpin reported rumours that Homfray had been "caught at close quarters" with Crawshay's eldest daughter, (SRO 1781/6/25, Gilpin to W. Wilkinson, 19 July 1797). Whatever the truth of these tales, three bastards are attributed to the Penydarren ironmaster in the Merthyr Baptismal Registers. See NLW Merthyr
Tydfil Parish Register, 1763-99, fo.36, for the baptism of Ebenezer Homfray, his son by Mary David, on 21 March 1786; fo.48 for the baptism of 'Margaret reputed Dr. of Mr. Saml. Homfray' on 26 December 1790; fo.68 - 'Charlotte (aged 2 years & 9 months) Reputed Dr. of Saml Homfray Esqr by Anne Williams was privately baptized'.

12 GRO D/D G 1811 B-W fo.120, W. Taitt to J.J. Guest, 11 May 1811. A year earlier, Homfray had had to pay £500 damages to Taitt for defamation; see the Cambrian, 2 April 1808, but also for 9 April 1808.

13 GRO D/D Pe 3(a), 'JHs Complaints against SH Novr 1796'.

14 SRO 1781/6/21, G. Gilpin to W. Wilkinson, 10 October 1796.

15 Cambrian, 1 October 1808, although this incorrectly states the marriage to be that of William, the son of Richard Crawshay, whereas it was that of William junior his grandson. Cf. GRO D/D Pe 32, pedigree of the Crawshay family.

16 Cambrian, 13 October 1810.

17 SRO 1781/6/26, G. Gilpin to W. Wilkinson, 20 April 1798.

18 PRO HO 42/61 fo.529, G. Hardinge to Duke of Portland, 11 April 1801.

1809, Crawshay replaced his son William - "who would never follow my advice and has treated me rudely in many instances" - as his executor and residuary legatee by his son-in-law Benjamin Hall. William Crawshay was reinstated by a codicil dated 4 May 1810, (GRO Pe 31).

20 Jenkins, p.87.

21 GRO Q/SJ 5, Glamorgan commission of the peace, dated 8 March 1793.

22 William Lewis served as sheriff in 1790; Jeremiah Homfray, William Taitt, and Richard Hill, all served between 1809 and 1816. Samuel Homfray was sheriff for Monmouthshire in 1813. See the List of Sheriffs for England and Wales from the Earliest Times to A.D. 1831 (Public Record Office index, reprinted New York, 1963), p.259.

23 Jenkins, pp.92-3.


25 See GRO D/D Cl 1/236, marriage settlement of Thomas Franklon and Ann Crawshay, May 1798.

26 DWB, sub Benjamin Hall (1778-1817). His son, also Benjamin Hall, became a cabinet minister under Palmerston, and lent his name to 'Big Ben' at the rebuilt Westminster. See DWB, sub Benjamin Hall (1802-1867).

27 See DWB, sub Homfray.
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28 SRO 1781/6/26, G. Gilpin to W. Wilkinson, 20 April 1798.

29 GRO Pe 3(a), 'JHs Complaints against SH Novr 1796'.

30 Crawshay's self-appraisal is in a letter to Lord Bute, GwRO D2.162 fo.222, RC to Lord Bute, 14 April 1797. SRO 1781/6/26, G. Gilpin to W. Wilkinson, 20 April 1798.

31 GwRO D2.162 fo.139, RC to Lord Dynevor, 14 March 1794.

32 CCL MS. 2.716(1/3) fo.4, 13 March 1790; GloRO D1086/F120, W. Lewis to J. Blagden Hale, 7 March 1790.

33 Jenkins, p.63.

34 GRO D/D Cl 1/236, marriage settlement of Ann Crawshay and Thomas Franklen.

35 See Crawshay's letterbook for 1795-96 passim, but especially fo.170, RC to W. Wilberforce, 23 November 1795. For the Board of Agriculture and Sir John Sinclair, (remembered in Crawshay's will), see R. Mitchison, 'The Old Board of Agriculture, 1793-1822', English Historical Review, LXXIV, 290 (1959), pp.41-69, and for a recent critical reconstruction of its intellectual milieu in the 1790s see M. Berman, Social Change and Scientific Organisation: The Royal Institution, 1799-1844 (1978).

36 Cambrian, 30 January 1808. Crawshay was joined in a trial on fifty acres of reclaimed marshland by a number of others, including William Taitt and some of the county's most noted agriculturalists. Cf., for the hemp project, D.G.C. Allan, 'The Society of Arts

37 Rev. J. Evans, *Letters Written during a Tour through South Wales in the Year 1803* (1804), pp.133-4, contains a short description of the factory and its machinery; the quotation is from a pencilled annotation to the copy in the BL, (shelf-mark 10369.g.22).

38 A strategic rationale for the Company was outlined in its original articles in 1792: "There being many Thousand pounds worth of Wool annually sold in the Fleece at a low price out of the County which might be Manufactured here so as to employ poor Women and Children & Yield some Five Times & some Ten Times as much & as there is a great Want of some Manufactory to employ women & Children especially in the Middle of the County...", (NLW Dunraven 203, enclosure in J. Franklen to W. Quin, ?1815).

39 Extensive details of the partnership are in NLW Dunraven 203, J. Franklen to Wyndham Quin, (?1815).

40 This was the verdict of Walter Davies in his compendious *General View of the Agriculture of South Wales* (1814), II, p.441. John Franklen believed that the scheme had been confounded by the outbreak of war in 1793, which had disrupted the usual export markets for kerseys. The Rev. Evans attributed failure to the "perverseness of the people in this part of the country which inclines them to prefer a life of indolence and want, to labour and sufficiency", *Letters*, p.133.

42 GloRO D1086/F120, W. Lewis to J. Blagden Hale, 5 July 1790.


46 GwRO D2.162 fo.154, RC to W. Wilberforce, 3 February 1795.


48 See Johnson, 'Foley Partnerships'; Raistrick & Allen, 'South Yorkshire ironmasters'. Schafer, 'Genesis and Structure of the Foley "Ironworks in Partnership"', emphasises the intended role of the enormous Foley partnership in ensuring exclusive access to supplies and markets for its constituent members.


51 GRO D/D G 1817 (3) G fo.375, 'Copy of part of a letter from Gilbert Gilpin of Coleport to Wm Wood of Cardiff 6th Decr 1817'. Cf. Josiah Guest's sour remarks on "the Staffordshire Ironmasters (whose increased make has been the source of all the Mischief to the Trade)", GRO D/D G 1816 A-C fo.49, J.J. Guest to T. Botfield, 11 March 1816.

52 See Evans, 'Uncrowned Iron King', pp.12-32.

53 GRO D/D G 1816 (2) H-J fo.228, A. Leake to J.J. Guest, 2 September 1816.

54 GRO D/D G 1817 (3) G fo.315, R. Fothergill to J.J. Guest, 21 August 1817.

55 See the letters written from London by Taitt to Thomas Guest during April and May 1806, GRO D/D G 1806 A-T fos.168-88.

56 For example, GwRO D2.162 fo.45, RC to J. Cockshutt, 30 June 1789, and fo.90, RC to von Reden, 10 February 1791. Count Friedrich Wilhelm von Reden (1752-1815) was appointed head of the Mining Office for Silesia by Frederick the Great in 1779, after he had toured Britain to study coke smelting. He recruited Isaac Wilkinson's son William to introduce the technique to Germany. After a series of unsuccessful experiments, von Reden returned to Britain in 1789 and visited Cyfarthfa in the summer of that year. W.O. Henderson, *Britain and Industrial Europe, 1750-1870* (1954), pp.150-2.
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57 Birmingham University Library (microfilm), journal of Joshua Gilpin, vol. XXVII (unpaginated), 11 November 1796. Joshua Gilpin, the American, visited Coalbrookdale and found there "Wilson a Portrait Painter of Birmingham...employed by R Crashaw in painting the chief Iron founders in the kingdom—now finishing W Reynold's J Wilkinson & R Crashaw". Cf. SRO 1781/6/25, G. Gilpin to W. Wilkinson, 19 July 1797: "[in] Crawshay's parlour I observed the following pictures, himself, son & daughter, your brother & Mr. Reynolds". More commonly, the trade was celebrated in song. In Shropshire, a chorus toasted 'John Wilkinson, boys, the supporter of trade'; (the full text is reprinted in Trinder, Shropshire, p.121). At Merthyr, a "curious song was composed...[in the late 1790s] in praise of Mr. Watkin George" of Cyfarthfa; T.E. Clarke, A Guide to Merthyr Tydfil (Merthyr, 1848), p.22. In 1806, after the withdrawal of the proposed pig-iron tax, Taitt sent down from London "16 Songs Composed & Sung by Mr. Wm Gibbons many years ago", for distribution among the ironmasters of Merthyr and Aberdare; GRO D/D G 1806 A-T fo.196, W. Taitt to T. Guest, 10 June 1806. (For William Gibbons, see below, footnote 73).

58 GloRO D1086/F120, W. Lewis to J. Blagden Hale, 18 June 1790. 'Priestly' was Joseph Priestley junior, the son of Dr. Joseph Priestley, the celebrated dissenting minister, politico-theological controversialist and scientist, who was John Wilkinson's brother-in-law. For confirmation see Crawshay's letter to James Cockshutt from London on 5 June 1790: "I set out this Evening for Birmingham visit, Bilston, Ketley & Willy Works &c, & propose being with you on the 12th with Mr. Wilkinson & his Nephew Mr. Priestley", (GwRO D2.162 fo.66).
See the sketch in Trinder, *Shropshire*, pp.116-17.

SRO 1781/6/28, G. Gilpin to W. Wilkinson, (?1804).

Quoted in Trinder, *Shropshire*, p.119.


GwRO D2.162 fo.124, RC to J. Wilkinson, 11 January 1792.

GwRO D2.162 fo.121, RC to J. Wilkinson, 28 December 1791.

For Williams, see J.R. Harris, *The Copper King: A Biography of Thomas Williams of Llanidan* (Liverpool, 1964). The narrative that follows is based on Crawshay's letter to John Wilkinson of 11 January 1792, (GwRO D2.162 fo.124).

Due to a hiatus in the records of the Monmouthshire quarter sessions for early 1790s, it is not possible to establish what became of the disputed rate.

BRL Boulton & Watt (Assay Office) MSS., Garbett letters box 2/28, printed notice dated 25 April 1786.

BRL Boulton & Watt (Assay Office) MSS., Garbett letters box 2/7, S. Garbett to M. Boulton, 23 March 1786.

BRL Boulton & Watt (Assay Office) MSS., Garbett letters box 2/27, 'Observations on the Copper Trade of
England & the Dangers of Exporting the Tools & Machines used therein', [April-May 1786].

For example, GwRO D2.162 fos. 46, 48 & 61, RC to Lord Hawkesbury (10 July 1789), to W. Reynolds (21 August 1789) and to Joshua Walker (17 March 1790).

GwRO D2.162 fo.221, RC to Sir John Sinclair, 5 April 1797.

BL Add. MS. 38233 fo.82, R. Crawshay to Lord Liverpool, 27 April 1799.

Chapter Eight

Merthyr Ironmasters and the Act for the Security of Collieries and Mines

On 3 March 1800 a number of ironmasters and coal proprietors gathered at Cardiff to discuss the propriety of 'an application to Parliament'.

"IT WAS RESOLVED. That it appears to this meeting that the Laws now existing are inadequate for protecting Mines, and Collieries, from depredation.

That an application be made to Parliament for an Act more effectually to secure Coal, and Iron mines, from Robbery, and Depredation; and for the better regulation of Colliers, and Miners".

Messrs. Walter and John Powell, attorneys of Brecon, were appointed to draft a bill, and the chairman, Edward Kendall of the Beaufort ironworks, was instructed to reconvene the meeting at the Star, Merthyr in six weeks time.1

This was, in its way, a seminal event. The act of parliament that resulted directly from this meeting was the first in English law to deal exclusively with coal mines as areas of production, and with the disciplining of the men and women employed in them. Its enactment provides the opportunity not just of tracing the machinations of the South Wales ironmasters as they
insinuated themselves towards the centres of power, but also of situating the 'Act for the Security of Collieries and Mines, and the Better Regulation of Colliers and Miners', its origins and passage, within the context of recent debate over the nature of the law in eighteenth-century society.

Why did the ironmasters and coal owners of South Wales feel that the 'security' of their mines was so flimsy? The underlying condition was the ready accessibility of mineral reserves. Seams of coal and beds of mine obtruded to within inches of the surface. The primitive techniques that sufficed to wrench these materials from the ground have already been noted: mine was got by patching and scouring, coal was had from levels running straight into the mountainside. This accessibility was the foundation of the ironmasters' fortunes, but it also rendered the district peculiarly vulnerable to theft and pilfering.

Illicit patching was an activity open to anyone who could lift a pick, and the levels that warrened the hillsides could not be policed. It was commonplace, the promoters of the bill claimed, "for persons, who had no right, to drive their carts into a mine of coal, and bring them out fully laden, without the least means of hindrance". That concessionary coal was often awarded to workers as part of
their wage bargain did little to encourage over-nice distinctions as to the rightful ownership of coal. Discussing the massive incidence of coal theft in the 1840s, Keith Strange has pointed out that workers thought nothing of appropriating available coal in lieu of their regular allocation, or that "others argued that no crime had been committed, and that in taking coal...they were merely exercising traditional rights in as much as where railways passed over common land...they were entitled to collect fallen materials". In fact, it was the practice of colliers' wives to scatter stones on the rails, so as to jolt the waggons and so ensure the maximum spillage of coal.3

The owners' contention was that their property could be raided almost at will. Doubtless the opportunities were great, and by 1800 they were increasing at a terrific rate. These were the miracle years when Merthyr and neighbouring centres of iron production were studded with new furnaces and engine houses, calling forth new mine patches and new coal levels. The burgeoning ironworks were not alone; the sale-collieries of Monmouthshire were also growing apace. Ideally placed to satisfy Bristol's industrial and domestic consumption, the export of coal through Newport had been significantly boosted by the cutting of the Monmouthshire canal in the mid-1790s.
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The phenomenal growth of the local iron industry multiplied the opportunities for theft. Moreover, the rash of small-scale mineral workings, spreading over the mountainsides, ever further from the surveillant gaze of the ironmaster and his agents, highlighted the many unsatisfactory aspects of the working arrangements then prevalent in the district. So, quite apart from the jeopardising of control which labour poaching and the bidding-up of wages which boom conditions entailed, the ironmasters were less willing to indulge the manifold frauds and sharp practices that were wrapped up in indirect employment. Some of these have already been discussed. Here, emphasis will be laid on the difficulties which the ironmasters experienced in effecting their speedy and efficacious punishment.

One basic method of reining in a troublesome subcontractor was a civil action to enforce the due completion of a job or to recover damages for its miscarriage. This was the procedure Richard Hill had adopted against William Thomas Griffiths, a miner who neglected his work for three months while the Plymouth furnace groaned for mine. It was a standard procedure for regulating a contractual agreement between two ostensibly equal partners. However, civil proceedings, which might be drawn out and costly, could not offer a simple and immediate instrument of discipline
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and retribution. More seriously, a suit might founder on the lack of correspondence between the individualist idiom in which contractual agreements were framed, and the collectivism of the work gang which cloaked the perpetration of fraud in the workplace. This was impressed upon William Lewis, the ironmaster of Pentyrch and Dowlais, when he wished to punish the three miners, a father and his two sons, who had been "overpaid on the Mine Castings by their putting Stones, & Earth, in the middle of the Heaps in order for it to be paid for as ironstone". A suit against the father would obtain recompense, but allow his sons — judged to be his hired workmen — to evade punishment, although their complicity in this most commonplace of frauds was evident.

The disposition to seek legislative change was given further impetus by the deteriorating state of labour relations, detectable in Merthyr at least, in the late 1790s. Data are scanty, but it would seem that considerable discord was generated through the disruption of price lists by war-time inflation, at the same time as the ironmasters sought to garner the fruits of vast increases in productivity to themselves, attributing them exclusively to capital investment. (The controversy over the furnacemen's 'guinea' in 1799 was one facet of this).
The discord was manifested in petitions, sullen combinations, and strikes. "The Puddlers at pendarran are in Revolt for an advance of 2/- a ton on Blooms", Crawshay told John Wilkinson in February 1797, "tho the Wages they now get at 12/- a Ton are excessive". In this instance, the ironmasters emerged victorious: Homfray inflicted a shilling cut on his puddlers, while at Cyfarthfa "we have Crush'd away farther attempts of the kind...mine have an indictment hanging over their heads". However, Crawshay concluded that a definitive statutory solution could not be long delayed: "I believe twill be necessary to have a Law in the Iron trade__on the principle of Stanary in Cornwall". While this was not a concrete proposal, it signifies a climate of opinion in the late 1790s in which the efficiency of existing legal arrangements could be debated.

Overall then, the ironmasters had every incentive to press for enlarged powers to coerce recalcitrant workmen and punish disobediences. More particularly, they sought a means of penetrating the collectivity of the work gang which cloaked fraud and pilfering, a means of individuating offences. And, following this, they sought to transfer some habitual workplace practices of which they disapproved into the sphere of the criminal law. These concerns were embodied in the proposals which the
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Powells, the attorneys commissioned to draft the bill, submitted to the ironmasters gathered at the Star, Merthyr on 15 April 1800. The first clause laid down a lengthy schedule of offences which were to be defined as felonies.

"if any Person or Persons shall wilfully or maliciously pull down, fill up or otherwise destroy or damage any Coal Work or other Mine Work...or shall, without the Consent of the Owner, unlawfully cut, dig, raise, take or carry away any Coal, Culm, or other Mineral...or shall, without such Consent, unlawfully enter into any Level...with an Intent [to do so]...or shall aid, abet, assist, hire or command...any such offence...every such Person or Persons shall be deemed and adjudged to be guilty of Felony, and shall be...transported for any Term not exceeding Seven Years..."

A second clause dealt with those colliers and miners who, "disregarding their Agreements, wilfully and obstinately work Coal and Iron Stone in a different Manner to what they stipulated, to the great and lasting Prejudice of their Employers". Such offenders were to be fined a sum not exceeding forty shillings. By the third clause, colliers and miners who "walled or stacked, any Coal, Iron Stone, or Iron Ore, in any false or fraudulent Manner, with an Intent to deceive his or their Employers" were to be incarcerated in the House of Correction for between one and three months. Finally, the bill laid down that the theft of any mineral or tool used in the getting of minerals from the premises of a coal dealer or ironmaster was to be penalised by a fine of ten shillings for a first
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...offence, with an escalating scale of punishments for subsequent transgressions.®

By May 1800 the fully drafted bill was ready for presentation to parliament. The superintendence of the business in London was to be shared by Edward Kendall, the Beaufort ironmaster who had chaired the original meeting at Cardiff, and John Powell who had drawn up the bill. In Wales, William Taitt was to liaise with those others who were sponsoring and financing the bill. Kendall was already experienced in supervising the passage of legislation, having attended Parliament on several occasions in the 1790s to oversee acts authorising canal building in Monmouthshire and Breconshire.® However, Kendall's real value lay in his ties with the Duke of Beaufort, the landlord of his ironworks at the head of the Ebbw Fawr valley, and in whose honour they were named.

The Beaufort connection was central to the bill's successful passage. It was to be piloted through the House of Commons by Charles Bragge (1754-1831) of Lydney Park, Glos., then M.P. for Bristol, but formerly the incumbent of the Beaufort pocket borough at Monmouth. Bragge was a figure of some importance in his own right, being the brother-in-law and intimate of Henry Addington (later Lord Sidmouth), then the Speaker of the House of...
Bragge was to be seconded by the Marquis of Worcester (1766-1835), the Duke's eldest son and M.P. for Gloucestershire, who was to preside over the reading of the bill in committee. His other lieutenant was Thomas Estcourt (1748-1818) of Shipton Moyne, Glos., the M.P. for Cricklade, who was also linked by ties of kinship and political sentiment to Henry Addington. Estcourt had an additional, fraternal interest in the bill. His younger brother, Edmund (1753-1814), was the solicitor and agent of the Duke of Beaufort. He was, as a consequence, a regular actor in the political and economic affairs of South Wales, holding a number of politically sensitive posts in the Duke's interest, including the receivership of taxes in Monmouthshire, and an aldermanship in Swansea. Like his master, Edmund Estcourt grasped at the opportunities of enrichment that were presented by the development of coal and iron in Wales. He was a shareholder in the Monmouthshire Canal, and a part-owner of the Llanhyddel colliery near Pontypool.
The auguries for the bill were good. It had the weighty aristocratic endorsement of the Duke of Beaufort, and would be supported by a tightly-knit caucus of Gloucestershire Tories. There was no reason to expect ministerial disfavour. It must, then, have been all the more alarming when, on 20 May 1800, Bragge moved for leave to bring in the bill, only to be confronted immediately by objections. Two M.P.s expressed an aversion to "unnecessarily extending the penal laws by increasing the number of felonies". Ominously, they were joined in this opinion by the future prime minister, Lord Hawkesbury. A shame-faced defence of the measure by Bragge, and a timely intervention by Thomas Estcourt mollified the objectors, but the bill's progress through the Commons proved to be a protracted and nervous business. It was subjected to amendment in committee, not once but twice. Additional amendments were inserted at its third reading. Worse was to come in the House of Lords. There the bill was effectively emasculated, when the peers threw out its references to felony.

* * *

If the treatment of the bill surprised its backers, it must also be said that its fate runs counter to expectations raised by that highly influential project on
the role of the law in eighteenth-century society which
was announced with the publication of the volume Albion's
Fatal Tree in 1975.\textsuperscript{14} The burden of this work, in the
words of E.P. Thompson, was that:\textsuperscript{15}

"the law assumed unusual pre-eminence [in the
eighteenth century] as the central legitimizing
ideology, displacing the religious authority and
sanctions of previous centuries. It gave way,
in its turn, to economic sanctions and to the
ideology of the free market and of political
liberalism in the nineteenth".

In fact, changes in the nature of the law in the
eighteenth century were an essential precursory guarantee
of a later bourgeois polity, in that an absolute and
inviolable sanctity was bestowed on private property. In
the keynote essay in Albion's Fatal Tree, Douglas Hay
noted the startling extension of penal statutes between
the Glorious Revolution and the 1820s, overwhelmingly
directed against offences against property. Hay argued
that legislators redefined all manner of infringements
against property as felonies. Property was "officially
deified", and encroachments against its sacred rights were
answered by penalties of great severity. As a part of
this process, notions of what constituted property were
themselves redefined, and a range of customary usages,
perks, and hallowed popular practices were recast as
invasions upon property and embezzlements.
While the law was a guarantor of capitalist development, it was also the foundation of social and political stability in Georgian England. The growing capacity of the law to take human life, broadcast with elaborate theatricality at the county assizes, was offset by a decline in the actual rate of execution. This, for Hay, indicates the strength of the law as a 'legitimizing ideology': the bloodthirstiness of the legal code was tempered by discretion in its use. A pardon might be available to a plebeian offender who was able to find a gentleman of respectability and influence to intercede on his behalf. But the price of mercy was deference, an acknowledgement of the prevailing power relations in society. Mercy was not open to the malefactor who could not produce a good character, who had cut himself adrift from the web of dependency in a gentry-dominated society.

Hay does not present the trend towards an ever more bloody legal code as the outcome of a conscious public policy; rather, it was the expression of a pervasive and unchallenged ideology which held the preservation of private property to be at the heart of human affairs. Given the strength of this assumption, public policy was superfluous, and the domain of the gallows and the convict ship could grow ad hoc: as a threat to some form of property was perceived, the requisite protection was
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granted, almost casually, often appended to an otherwise innocuous article of legislation.\(^\text{16}\)

This is a cogent and stimulating thesis, and one for which supporting evidence can be found in the laws passed to shield property in coal mines.\(^\text{17}\) Such as there were prior to 1800 had been appended piecemeal to other parcels of legislation. Appropriately enough, the first of these had been tacked onto the notorious Black Act - for E.P. Thompson and his collaborators, the acme of legal terror - on its third renewal in 1736 (10 Geo.II c.32). Previous renewals had already brought the breaking of sea and river banks, and the malicious cutting of hop binds within its bounds. Now the wilful setting on fire of any coal working joined these as a capital offence. Another relevant statute was enacted in 1769. Following a spate of violent food riots, the nation's legislators fixed upon death as the condign punishment for the destruction of corn mills. As the bill progressed through parliament, it acquired a number of additional provisions, including one that prescribed the gallows for damaging fire engines used for draining coal and other mineral workings.(9 Geo.III c.37).

The example of coal can provide strong corroboration for Hay's findings. Indeed, he cites the act of 1769 as
typical of the way in which the death penalty was extended. However, there are problems that should at least be broached here, even if they cannot be resolved. Two punitive laws dealing with coal production seems a small total for the entire eighteenth century. If the wave of capital statutes was intimately connected with the "maturing trade, commerce and industry of England" - and the connection seems reasonable - then it might be expected that more attention would have been given to an industry of such importance, and one that knew such an enormous expansion in these years. It was not the case that parliament was neglectful or ignorant of coal. The coal trade was diligently attended to, and by 1800 the vend of coal to London was encrusted with legislative regulation. Nor was it the case that coal owners were under-represented in parliament; many of the greatest landowners in the kingdom enjoyed the profits of coal raised on their estates, and they were never shy of protecting their interests. In short, it is the absence of legislation concerning the coal industry that requires some explanation.

A number of tentative suggestions can be made. For one, it would be premature to discount the variety of social and regional contexts in which coalmining was developing. Coalowners in various parts of the country could draw upon
sanctions and disciplinary apparatuses already embedded in the structure of local society. In Scotland, 'serfdom' among colliers persisted until 1799; in the Forest of Dean, ancient regulations stymied the growth of large-scale capitalist enterprise; in the small and isolated sale-collieries of Monmouthshire, the manner in which capitalist development proceeded was markedly different to the pattern seen on the great landed estate of Earl Fitzwilliam in south Yorkshire. If the particular social settings in which coal was extracted provided extra-legal controls which functioned satisfactorily, then coalowners may have felt no temptation to overhaul or supplement them, unless goaded by a special emergency.20

Equally, it can be suggested that the panoply of the law was such as to permit the masters' use of a selection of disciplinary statutes that were not specifically concerned with mining. Most of the Merthyr ironmasters were magistrates, and all were well acquainted with standard legal handbooks like Burn's The Justice of the Peace and Parish Officer, from which they plucked the powers best suited to their purpose. In 1799, the Dowlais Company broke a combination of furnacemen with the aid of a law of 1766, governing breach of contract between masters and servants in an open-ended list of trades.21 Two years later, a stoppage by furnace fillers at Dowlais enabled
Taitt to show off a legal acumen that was well-informed and up-to-date when discussing the application of the Combination Act.\textsuperscript{22}

"Neither Mr Crawshay nor Mr Miers can Act under the 39th & 40th G.3. C:106 being Masters in the same kind of Manufacture in which the men were employ'd by us, neither do I think it wou'd have so good an effect to punish them under that Act as it wou'd by Indicting them for a Conspiracy to raise their Wages".

Detailed comparative study of proprietorial practice can reveal that the punitive weapons available to coal owners and ironmasters were by no means as meagre as a cursory scrutiny of the statute book would suggest.

It is one thing to posit reasons why the eighteenth-century coal industry did not generate harsh disciplinary laws, quite another to explain why, when the South Wales ironmasters sought to introduce a coercive law, it was rejected. How was it that a measure designed to safeguard an important category of property was thoroughly dissected and substantially stripped of its terror?

It is possible to offer some provisional answers. First of all, the fate of the bill indicates that where prospective legislation had been sloppily or imprecisely drafted it would (contra Hay) arouse considerable debate.
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amongst interested parties. Thus, at the initial committee stage, Bragge and Estcourt had to contend with the reservations of Rowland Burdon, M.P. for the county of Durham. As the representative of the leading coal-producing county in the kingdom, Burdon had an obvious interest in the matter, and he showed a fine appreciation of the difficulties of implementing the bill as it then stood. He did not dispute the general thrust of the bill, but contented himself with exposing lacunae and over-hasty prescriptions. His suggested alterations were:

"fixing a Time for the commencement of the Act, a Proviso, not to make it Felony cutting Coal where there is a dispute about ownership, or to Trespass upon bounderies working under Ground".

Since these were not inimical to the substance of the bill, Bragge, Estcourt, and Kendall, meeting in conclave, thought it proper to accept.

On 13 June 1800 the bill passed the Commons and was carried to the House of Lords. It had been subjected to some unwelcome dilution, (the clause dealing with failure to abide by agreements, for example, now stipulated written agreements), but it remained fundamentally intact. Kendall chafed at the repeated delays, but he was hopeful that "we shall, by Lord Eldon's assistance and the Duke's Friends, get through the Lords". As an additional
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precaution, Kendall and his colleagues canvassed peers they expected to be sympathetic to the measure: Lord Moira, the driving force behind the development of the Leicestershire coalfield, and a prospective ironmaster; Lord Fitzwilliam, who had begun a substantial expansion of mining operations on his Wentworth Woodhouse estate in Yorkshire in the mid-1790s; Lord Uxbridge, who exploited the reserves of copper ore on his Anglesey estate in partnership with Thomas Williams of Llanidan. Auxiliary support was to prove very necessary, for when the bill was committed in the upper house:

"The Lord Chancellor objected to the Bill, & wished to have more Time to consider it: The Duke of Beaufort came just in Time to prevent his putting it off for a distant Day, and explained to him as far as he could the nature of our situation...I hope we shall get part, if not all we want: but you may depend upon it the Long Robe are not our Friends".

Despite the Duke of Beaufort's prompt action, and a series of anxious interviews between Bragge, Moira, the Lord Chancellor, and Eldon which salvaged the bill, its penalties were markedly softened. The illicit appropriation of coal that was to have been labelled as a felony by the crucial first clause, was to be a misdemeanour instead. The sentence was amended accordingly - instead of a maximum of seven years...
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transportation, offenders were now to be subject to a maximum of six months imprisonment.

What could account for this reverse? Kendall singled out the antipathy of Lord Loughborough, the Lord Chancellor. The nature of the Chancellor's legal misgivings was not disclosed, but Kendall made it plain that the problem had been aggravated, if not instigated by a hostile correspondent. The author of this 'mischief' was, he believed, "C. Smith". This was almost certainly Charles Smith (d. 1813), the owner, with his brother Henry, of a number of collieries at Llansamlet, near Swansea. Smith's involvement signifies that the opposition to the 'colliers' bill had its axis in tensions within the regional economy defined by the Bristol Channel. As coalowners in the west of Glamorgan, the Smith brothers had every inducement to sabotage a venture supported by their rivals in Monmouthshire.

In 1800 a South Wales coalfield could be spoken of only in a geological sense. In reality there were two competing coalfields - the one, in the west, about Swansea and Neath, the other, in the east, above Newport. The intervening zone, centred on the Rhondda valleys, was as yet undeveloped. The two coalfields confronted one another in a fierce struggle to tie up the market for fuel
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in Bristol and the west of England. As the capacity of Kingswood to supply Bristol waned, competition on the Welsh side of the Channel intensified.

In 1797 the contest had taken a decisive turn, arranged by those tireless servants of the Monmouthshire interest, Edward Kendall and Edmund Estcourt. In an act authorising the extension of the Monmouthshire Canal (37 Geo.III c.100), they secured parliamentary recognition that the 'Holms', two tiny islands between Cardiff and the Somerset coast, marked the dividing line between the river Severn and the open sea by virtue of immemorial custom. This was a veritable body blow against the 'Welsh' coal owners. Coal shipped from Newport to Bristol or, via Bridgewater, to the west of England, was classed as river traffic and thus exempted from port duties. In this way, the Monmouthshire producers were granted an automatic price advantage over the sea-borne coal from the ports of west Glamorgan. Coal shipments from Newport to the ports covered by the privilege responded instantly to this stimulus, as the table overleaf indicates.

The 'Welsh' coal owners were swept aside by their rivals in the valleys above Newport. In 1818, when 75,000 tons of Newport coals were docked at Bristol, and a further

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Volume of coal shipped from Newport to Bristol and Bridgewater (in tons)

<table>
<thead>
<tr>
<th>Year</th>
<th>Bristol</th>
<th>Bridgewater</th>
</tr>
</thead>
<tbody>
<tr>
<td>1796</td>
<td>1,020</td>
<td>988</td>
</tr>
<tr>
<td>1800</td>
<td>6,370</td>
<td>10,842</td>
</tr>
<tr>
<td>1802</td>
<td>10,805</td>
<td>15,233</td>
</tr>
<tr>
<td>1804</td>
<td>16,678</td>
<td>26,235</td>
</tr>
<tr>
<td>1806</td>
<td>33,835</td>
<td>26,516</td>
</tr>
</tbody>
</table>

Source: BPP House of Lords Sessional Papers (1830), CCLXXVII, p.255.

49,000 tons at Bridgewater, the total volume of coal exported from Swansea barely exceeded 12,000 tons. This was the context for hostility towards the 'colliers' bill in 1800. It was clearly identified as the work of the Monmouthshire coal lobby which three years earlier had surreptitiously won an unwarranted privilege. That it was Charles Smith who tried to abort Estcourt and Kendall's new scheme should come as no surprise. It was of a piece with the antagonism that every initiative from the Monmouthshire men met with in the circles of the 'Welsh' coalowners. The Smith brothers were unswerving opponents of the Newport privilege. In 1803 they were among those
Act for the Security of Collieries

who petitioned for its revocation. And in 1810, Henry Smith (?1765-1826), by then an M.P., secured a select committee to investigate the validity of the exemption it conferred. These efforts were unavailing, as was a further appeal to parliament in 1817; the privilege only perished with the abolition of all coastwise duties in 1831. However, the resentment aroused by the Newport 'coup' of 1797, which Kendall and Estcourt had orchestrated, suggests the intensity of commercial rivalry in the Bristol Channel region — a rivalry to which the 'colliers' bill of 1800 fell victim.

Moreover, commercial enmity coincided with increasing political alienation between the Duke of Beaufort and Swansea, once an unassailable stronghold of the Somerset family. Dr. Philip Jenkins has shown that relations between the Beauforts and the town's commercial and industrial elite were amicable and profitable for the greater part of the eighteenth century. But from the 1780s, a more assertive section of the business community, having outgrown Beaufort tutelage, took an increasingly oppositional stance. The dominance of the Duke and his over-mighty stewards was challenged, in a libertarian rhetoric, by those who disputed his right to dictate the pace and direction of economic development in the town and its environs. Here too, the familiar names recur:
Act for the Security of Collieries

Edmund Estcourt as a Beaufort nominee to Swansea corporation, Charles Smith as an opponent of ducal power.35

* * *

The 'Act for the Security of Collieries and Mines, and for the Better Regulation of Colliers and Miners' came into operation on 1 September 1800. The following month, Kendall called at Merthyr to receive payment of his expenses and to distribute copies of the act.96 Contrary to expectations, he had failed to get 'all we want'. In fact, the experience had been frustrating and chastening for him and his fellow promoters. It does, though, suggest some conclusions about the process of criminal legislation as theorised by Hay et al. The attempt of Hay and his collaborators to draw links between the proliferation of penal laws and the hastening of capitalist development is to be applauded. What should be questioned is the assumption that 'property', the object of legislative protection, was unitary in character.

In an obvious sense, property was astonishingly variegated, and growing more so: the accelerating production of wealth spawned new forms of property, and
transformed existing forms as the tightening integration of the national economy drew previously disparate sectors into a closer alignment. However, the process of combined and uneven development could both multiply the gross mass of 'property' and open up fissures between competing regional and sectoral groups. In brief, it cannot be assumed that property combined in a frictionless union.

The breadth of eighteenth-century definitions of property provided the space for conflicting conceptions of property, and of the rights and obligations that were bound up with it. Property might encompass the non-privatised resources of the poor - such as the rights to graze or glean - whose erasure is heavily emphasised in Albion's Fatal Tree and Whigs and Hunters. But rights of property which, consonant with 'modern' definition, were for private and exclusive usage knew an astounding variety. Collected under this heading were not merely physical materials, (land, buildings, livestock, tools, an infinity of personal possessions), but what in modern parlance would be termed rights or appointments. Thus, an office holder equated his tenure with freehold property. Also classified under the rubric of property were innumerable privileges, exemptions, and 'liberties', enshrined in scores of grants, charters, and dispensations. These jostled with more familiar forms of
property, their owners all seeking unfettered enjoyment of their rights. Sure enough, the privilege of Newport to ship coal free of duty, a right based not on an abstract definition, but an appeal to immemorial practice, curbed the Swansea coalmasters' enjoyment of their property.

This competitive rivalry would have been unremarkable but for the peculiar fashion in which criminal legislation was obtained in the eighteenth century. As Hay pointed out, the legal code grew according to a piecemeal accretion of statutes, at the behest of a plethora of sectional and provincial interests. It owed nothing to a preconceived or 'rationally' planned scheme. Precisely because there was no 'public' policy, only a stream of private initiatives, the resentments and rivalries of the outside world could be reproduced, directly and unalloyed, in the legislative arena.

It is possible to explain on this basis why the 1800 Act was poorly received upon its introduction to the House of Lords - enemies of the the Monmouthshire coal lobby had prejudiced the mind of the Lord Chancellor against the measure. But this cannot explain why their arguments were persuasive, or what legal deficiencies the bill contained.
Act for the Security of Collieries

such as to deter the Lord Chancellor, and others, from lending it their support.

More generally, the experience of the South Wales ironmasters and coalmasters in 1800 points to an imbalance in research on the role of industrial lobbies and interest groups in the eighteenth century. While much has been written concerning the activities of Boulton, Garbett, and the Midlands manufacturers,\textsuperscript{37} rather less has been said about the ironmasters of the late eighteenth century. Since the pioneering work of Ashton in the 1920s, the 'community' of the iron trade has been neglected. The shortage of work on the South Wales ironmasters has been especially marked. (Ashton drew most of his material from Yorkshire and the Midlands).\textsuperscript{38} They were geographically, and, to a lesser extent, culturally isolated in the Hills, without roots in the kind of rich urban matrix that nourished Crawshay's 'Birmingham Presbiterian junto'. For all that, as this chapter has sought to show, they were capable of mounting campaigns and initiatives commensurate with their growing economic power. The value of the 1800 'Act for the Security of Collieries' as an example of their power lies in its providing a point of entry into the area of intra-trade collusion which found institutional expression in the ironmasters' quarter-days, while still suggesting the
complex regional and political context in which the Merthyr ironmasters pursued their goals. 39


4. See above pp. 210-12.

5. GLORD D1086/F116, W. Lewis to J. Blagden Hale, 12 March 1786.

6. See above pp. 189-93.


9. Edward Kendall, (d. 1807 — see the Cambrian, 14 March 1807), had taken the lease of a site on the Breconshire-Monmouthshire border from the Duke of Beaufort in 1779, in partnership with his father, Jonathan Kendall of Crayton, Salop, and his brothers, Henry, of Ullerton, Lancashire, and Jonathan the younger, of Lea Fairs, Cheshire. (GwNO D.397.1664). Described in the lease as a 'gent.' of Warrington,
Endnotes to Chapter Eight
Merthyr Ironmasters and the
Act for the Security of Collieries and Mines

1 GRO D/D G 1800 A-T fo.69, printed notice dated 3 March 1800.

2 Parliamentary Register, XI (1800), p.564.


4 See above pp.210-12.

5 GloRO D1086/F116, W. Lewis to J. Blagden Hale, 12 March 1786.

6 See above pp.189-93.

7 GwRO D2.162 fos.215 & 217, RC to J. Wilkinson, 15 February & 3 March 1797.


9 Edward Kendall, (d.1807 - see the Cambrian, 14 March 1807), had taken the lease of a site on the Breconshire-Monmouthshire border from the Duke of Beaufort in 1779, in partnership with his father, Jonathon Kendall of Drayton, Salop, and his brothers, Henry, of Ulverston, Lancashire, and Jonathon the younger, of Lea forge, Cheshire, (GwRO D.397.1664). Described in the lease as a 'gent.' of Warmington,
Act for the Security of Collieries


12 I have gained this picture of the Estcourts from a reading of the Sotheron-Estcourt MSS. in the Gloucestershire Record Office, especially from the papers of Edmund Estcourt, GloRO D1571/F136. For background see *VCH Gloucestershire*, XI (1976), pp.249-55.


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18 Hay, 'Property, Authority and the Criminal Law', p.21.

19 Hay, 'Property, Authority and the Criminal Law', p.21.
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23 NLW Maybery 2853, E. Kendall to J. Powell, 10 June 1800.

24 NLW Maybery 2853, E. Kendall to J. Powell, 10 June 1800.


27 Harris, Copper King, pp.51-2.

28 NLW Maybery 2855, E. Kendall to J. Powell, 20 June 1800.

29 NLW Maybery 2855, E. Kendall to J. Powell, 20 June 1800.

30 Hadfield, Canals of South Wales, p.132.
Act for the Security of Collieries

31 BPP 1819 XVI, An Account of All Coals Carried Coastways, pp.216-17

32 BPP 1810 IV, Report of the Select Committee on the Petition of the Owners of Collieries in South Wales.


35 See Estcourt's obituary in the Cambrian, 26 November 1814, and the Cambrian, 3 August 1805, for Charles Smith as a litigant of the Duke of Beaufort.


38 Ashton, 'Early Price Associations'.

39 Given better source material, it would be useful to explore the intermeshing of the politics of the iron trade with the longstanding political cleavages of
Act for the Security of Collieries

south-east Wales. Significantly, Samuel Homfray and Edward Kendall - partisans of the Morgans and Beauforts respectively - called rival meetings in April 1806 to discuss a response to the proposed forty shilling tax on pig iron. Cambrian, 26 April 1806.
Chapter Nine

Community and Politics in the Age of Revolution

If the ironmasters showed an alertness to the difficulties facing the iron trade, and an inventiveness in overcoming them, it cannot be said that they approached the problems arising from the urbanisation of Merthyr with the same dedication. They were reluctant, evasive civic leaders.

Yet Community and Politics in the Age of Revolution issues alone which provided Merthyr's reason for being, and the policies they pursued within their ironworks, and their relations with their workforces, had effects which reverberated through the district. Moreover, when the ironmasters did choose to intervene in parochial affairs, as they did in the late 1790s, they did so with decisive effect, and with lasting political consequence.

The fundamental fact of Merthyr as an urban community in the last years of the eighteenth century was the massive and unrelenting influx of people. It was only the sheer bulk of this migration that allowed the place to lay claim to urban credentials at all, for as Merthyr urban accomplishment waited - always belatedly - on industrial process and its demand for human labour. Prior to the
Chapter Nine

Community and Riot

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coming of iron, Merthyr's economic importance had been entirely negligible, in keeping with its threadbare hinterland. Nor had it ever been the seat of any judicial or administrative function. Its retail and professional sectors remained, on a generous estimate, rudimentary. In fact, so deficient was Merthyr in the varied and sophisticated facilities and services which were increasingly evident in urban society elsewhere in Britain that some early visitors doubted its entitlement to urban status.1 "Not withstanding its magnitude and commercial consequence", wrote one in 1811, "Merthyr Tydfil is but a village, although by courtesy it enjoys the title of town".2

Merthyr had not the least institutional apparatus to facilitate the absorption of immigrants. It had only the ironmasters, and, a grouping that should not be underestimated, the 'aboriginals' of the district - the small farmers and freeholders of the parish, and the coterie of tradesmen and dealers that inhabited the tiny pre-industrial village. Relations between the two camps were equivocal. The hillside farmers and village tradesmen were affronted by the overweening power of the ironmasters, but, at the same time, they were allured by the prospect of self-advancement.
Resentment towards the ironmasters had made itself felt as early as the 1760s, when Isaac Wilkinson, then at Cyfarthfa, preferred an out-of-court settlement with local adversaries to trying a case at law. Experience had already taught him to fear the "aversion the persons in that Neighbourhood had to the said Works and the partiality they would probably be inclined to Shew". John Guest also encountered the intransigence of local feeling at an early date. No sooner had he entered into possession of the Dowlais furnace, than "Divers persons claimed to be intitled to the said Watercourses used...in said Works for scowering". Guest was forced to offer his truculent neighbours free coal in compensation. By the 1780s, Crawshay was complaining to central government of the "litigious Suits, created by very small Individuals against the Ironmasters in the Hill Countries of Wales...for obtaining the mine by scowering".

The rival claims of grazing and mineral exploitation proved a fecund source of contention. Nevertheless, for those who could command some freehold property endowed with mineral wealth, the spoliation of their fields need not be without profit. Rowland Williams of Gwernllwyn Uchaf captured the ambivalence perfectly: a local notable who had, in the early 1780s, launched a legal (and physical) remonstrance against the Dowlais Company, he
was, a decade later, in negotiation with the Company over mineral leases. The product of the high, wind-blown farms remained puny when set against the riches conjured forth from the ironworks, but industrialisation proved a vivifying experience for several of the parish's ancient lines. Where precious ores were at stake, the freeholder could, for once, bid defiance to the 'Iron Devils'. By the judicious use of false rumour, the ironmasters could be goaded into escalating their bids for mineral rights. Thus, David Edwards was able to play Richard Crawshay and Samuel Homfray, one against the other, for the limestone on his farm at Gurnos.

In retrospect, the freeholders of the parish, who ceded their little estates on long leases, appear to have swapped their birthrights for a veritable mess of pottage. While there can be no doubt that the ironmasters had by far the best of these bargains, the payments they made over in the late eighteenth century represented an important infusion of wealth into the locality. Several yeoman families of the parish were able to play a subsidiary, yet remunerative, role in the plunder of local resources. The Davies family of Gwernllwyn Isaf, for instance, pillars of local Baptism, worked the rich lode of ore beneath their farm to advantage, and grew prosperous in tandem with their main customer, the Dowlais.
Community and riot

Company. Similarly, William Morgan, the squire of Grawen, just over the border in Breconshire, leased strategic land holdings to the Homfrays at Pontmorlais, and extracted a good rent from the Dowlais Company for laying a railroad over other of his premises. Others made a jealous defence of their rights of common on the mountain tops, prompting the ironmasters to dole out contracts for haulage and such like, in an effort to assuage resistance. Robert Thompson explained the reasoning behind one of these agreements:

"Milward is Price of Callan ycha's [Galon Uchaf] Son in Law I let him have one Ton of Piggs for his Cart that was going for a Load of Flour. I did it to keep on good Terms with them as they may be very troublesome by pounding Cattle from Gellyfailog and Gwainfarran, there is no dealing otherwise with such as those that are worth nothing".

Again, those who were aggrieved by the relentless aggrandisement of the ironmasters, occasionally found one of the ironmasters ready to abet their protests, for the nuisance they could cause to rival works. Watkin Harry, a freeholder who brought an action against the Dowlais Company in 1794 for building houses on Merthyr Common, was really no more than Samuel Homfray's catspaw: "S Homfray having no right of Common in himself hired this Mans name & Indemnified him by a bond of 1500£ against any expences that might fall upon him in consequence".
In boom town conditions the opportunities for making money were manifold. Very often it was only the old freeholders and traders of Merthyr who were present to meet the demands of an emergent urban community. More accurately, the commitment of the ironmasters to the development of a more adequate apparatus of supply was grudging and ambivalent. The provision of housing illustrates the point nicely. The requirement of recruiting skilled and experienced workmen from distant areas compelled the ironmasters to attend to the problem of accommodation. If suitable labour was to be attracted and retained, it had to be properly housed. Accordingly, the Homfrays built 'Row y Saeson' (Saxon Row) for the squad of English forgemen they brought to initiate the Penydarren works in the mid-1780s. In the early 1790s both Crawshay and the Dowlais Company were erecting 'cotts' for their workmen at the cost of thirty guineas per unit. Other developments cannibalised existing buildings, such as the stable at Dowlais that was converted into a block of back-to-back dwellings in the early 1790s, in readiness for the expansion of the works.

These initiatives were of importance, and seem to have provided accommodation of a relatively good standard, but they were limited in their extent. In the late 1790s, when the workforce at Cyfarthfa must have been approaching
one thousand, Crawshay had fewer than sixty houses at his disposal. The ironmasters catered for the corps of skilled men who had been promised a house and garden as part of their bargain. Others could shift for themselves; the ironmasters would not bear the costs of sheltering their workforces in their entirety.

The field was open to a swarm of speculators, all eager to turn scraps of land to good account. The Davieses of Gwernllynw Isaf switched from mining to building on one corner of their farm; their co-religionist William Williams, the Baptist shopkeeper, packed houses onto a parcel of land at Pontmorlais; to the south, Jenkin Williams, glazier, was building on the Glebeland. These were joined by a number of senior workmen from the ironworks, buoyed up on the profits of subcontract and supervision. David Cornelius, a miner, developed a plot at Pontmorlais; nearby a row was erected along the Morlais brook by Wild, the Methodist furnace manager at Penydarren; other dwellings were put up by Cornelius Guest, the Dowlais forgemaster.

Houses were thrown up on a piecemeal pattern, dotted about the yards and fields on the edge of the village, crammed into the interstices of existing developments or stretched along the side of the lanes and gutters about the
Community and riot

ironworks. To an outsider, the town appeared as no more than an agglomeration of shacks and cottages, "erected on the spur of the occasion, without plan or design, producing a confusion and irregularity in their relative positions, the natural result of such a proceeding". This chaos of housing, put up as quickly as sub leases could be drawn up and credit obtained, gave Merthyr the aspect of an "extended suburb to a large town [where] the town itself is nowhere visible". But the suburb was never spacious enough to hold the amorphous and mobile population that thronged the ironworks. It is now impossible to gauge the degree of overcrowding, or the

Overleaf - a panorama of Merthyr by J.G. Wood (1811): the central core of the town as seen from near Pontmorlais. In the right foreground, Jackson's Bridge links Merthyr village with Cyfarthfa. Further downstream, the latticed metal of the Iron Bridge, built by Watkin George, the Cyfarthfa engineer, in 1799-1800, provides another crossing of the Taff. Ynysgau chapel is hidden among the tight cluster of housing by the Iron Bridge. To the south, the parish church, with its tower, stands at one end of the High Street, which extends away to the left. Beyond the village, the Plymouth works are lost in a haze of smoke.
number of those who slept among the coking ovens and brickfields. But the notes of investigators who toured Merthyr in the 1840s, when immigration was still running at a phenomenal level, make sombre reading.

A still more serious inadequacy was to be found in the town's retailing trade. Quite simply, the trading sector of the eighteenth-century village was swamped by the inflow of migrants. In 1822 retail facilities at Merthyr amounted to one shop per 400 inhabitants, when a commercial and ecclesiastical centre like York could boast a ratio of one per 70 inhabitants. The 'Trade' of Merthyr, according to a 1795 directory, amounted to no more than a hundred names. The listing was prosaic in tone, populated mainly by butchers and tailors, shopkeepers and shoemakers, and, most numerous of all, victuallers. The designation of Peter Onions as a 'Mathematical-instrument maker' struck, by Merthyr standards, an altogether exotic note. Otherwise Merthyr was slow to collect the attributes of urban sophistication: the Star was the only inn of consequence; the first printing shop did not open until 1801; the professions were underdeveloped. Educational and recreational facilities that would have gone unremarked in a small market town in England were
Community and Riot

absent from what was a world centre of industrial production.

Only the ironmasters had the resources to make good these deficiencies, but their infrastructural interventions were, for the most part, desultory. Plans to open a bank in the town in 1791, with capital drawn from Cyfarthfa, Penydarren, and Dowlais, came to nought.\textsuperscript{25} Joint initiatives to improve the state of commercial accommodation were no more successful.\textsuperscript{26} Yet there was one area where crude necessity compelled the ironmasters to intervene in a serious and consistent fashion, regardless of their inclinations. This was the provisioning of the town.

Just to prevent the dispersal of their workforces, the ironmasters had to organise enormous shipments of foodstuffs. Without these, Merthyr must have starved, and the ironmasters were actuated by a keen appreciation of the consequences of want: "I dread Rebellion at this Spott", wrote Crawshay in the spring of 1793. To counter the threat, the Cyfarthfa ironmaster had already begun to bring whole cargoes of grain to Merthyr. He ordered 1200 tons of American flour, and an unknown quantity of English grain to top up the consumption of his workmen after the 1792 harvest.\textsuperscript{27} His example was copied at Dowlais, where
the Company began to bring in supplies for its men on an extended scale at the same time. At Penydarren, a works shop was opened in the course of the following winter.\textsuperscript{28}

Henceforth, during the pinched years of the late 1790s, the subsistence of Merthyr's ironworking population was underwritten by the ironmasters. The latter took on the task with reluctance. It was likely to be attended with expense and inconvenience, and with little prospect of profit. Moreover, to operate as a common grocer was hurtful to the pride of the trade: "I know we cannot carry on the Works without supplying the Workmen with provisions", William Lewis, in imperious mood, told Thomas Guest, ". . .[but it] is degrading ourselves, as Ironmasters".\textsuperscript{29} In keeping with this spirit of disdain, the ironmasters made little or no effort to involve themselves in other aspects of town life. Certainly, they rarely interested themselves in the secretive world of plebeian Merthyr. However, historical inquiry cannot be so dismissive, and it is to this sphere, however difficult to decipher, that reference must now made.

* * *

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At some point in the 1780s, Joseph Thomas Rees, a Dowlais miner, applied to the Company for leave to build a house at Pantywaun, on Merthyr Common. The site had been extensively scoured for mine, and the Dowlais Company turned down his request on the grounds that a house would hamper any future excavations. Rees built his house regardless, using the rubble that littered the spot in the aftermath of scouring to make the dry-stone walls. For the roof, he used timber supplied gratis by his native parish of Gelligaer.

Faced by this fait accompli, the Company pressed Rees to make some acknowledgement in respect of his cottage, and he consented to pay a trifling sum, amounting to about five shillings per annum. He made the last such payment in January 1791, when he handed over a total of 2/6. Soon after, he sold his cottage to one Thomas Harry. Clearly, Joseph Thomas Rees had no doubt as to his right to dispose of his humble property as he saw fit. Perhaps he drew on memories of the ancient Law of Hywel Dda, the tenth-century king of Wales, wherein the act of construction was held to confer freehold right. The buyer, Thomas Harry, was no less confident of his rights, and refused point blank to pay any acknowledgement.
These circumstances, recorded only for their tangential relevance to one of the more squalid disputes between the Penydarren and Dowlais companies, are worthy of note. For they mark the intersection of some of the most important themes of social practice in late eighteenth-century Merthyr. At first sight, the episode is merely a reprise of that ever-recurrent theme of early industrial Merthyr—conflict over the usage of the physical environment. Yet the usual format for such contests, a grinding tussle between two of the great iron companies, does not feature. Instead, the combatant of the Dowlais Iron Company was a lone miner who proceeded on his chosen course with blithe self-assurance. His casual defiance affords a glimpse of an area of experience that otherwise has few memorials—the plebeian milieu in which Joseph Thomas Rees moved, the context of values and judgements which framed his actions. His behaviour expressed an assumption that his informal appropriation of a small area of Pantywaun was fully justified; that the displeasure of his masters would be ineffective; and that his title to the unmortared squatter cottage would be widely recognised among his neighbours. In all of this his confidence was well founded.

From the perspective of those responsible for the maintenance of authority and public order in the district, the independence of spirit shown in these actions was less
palatable: it was symptomatic of a plebeian culture which
was unusually resistant to notions of subordination and
deerence. Addressing the grand jury of Glamorgan in
1790, justice Hardinge singled out Merthyr for
disapproving mention: 31

"But what he dwelt longest upon, and to which he
gave the greatest force was the present state of
Police at Merthir—he pointed out the evil
consequences arising from the want of Justices
of the Peace in that place,—a place he observed
which stood in greater need of them than any
other in the County..."

The judge recommended that the grand jurymen petition the
lord lieutenant to draw up a new commission of the peace
with all possible speed:

"and to request his Lordship to insert therein
all the respectable names he could find in that
place and neighbourhood, as the sure method of
preserving peace and good order amongst a set of
people which he understood were naturally
turbulent etc etc".

It was this sense of emergency that ensured the inclusion
of the ironmasters in the new commission of 1793. But
reinforcing the magistracy was only one curb on the
'natural' turbulence of Merthyr's inhabitants, as Hardinge
well understood. He had concluded his address with a
homily on the "encouragement of Matrimony in that quarter,
and while on that subject he read some very pertinent
remarks from a Pamphlet of the Rev. d Mr. Paleys..." 32
With this, he alluded to the transient nature of the town's population, its 'unconnected Populace'. Like any other boom town, Merthyr attracted the young and the unattached, especially those fleeing the overburdened agricultural districts of west Wales. It offered ready work and comparatively high wages. For runaways and fugitives, it was an anonymous haven. "Of many", wrote the censorious Charles Wilkins, "it would not have been wise to make too inquisitive an inquiry, for the rougher element contained some who sought the seclusion of Wales in order to hide their traces from deluded creditors or too confiding women".33

Because of these qualities of anonymity and flux, the actual dimensions of the migration which flowed into early industrial Merthyr remain elusive. It can, though, be said that Merthyr was a thoroughly masculine town. In 1801 women comprised only 44.5% of the parish population - a figure reflecting the preponderance of male employment opportunities, and lending credibility, perhaps, to the popular supposition that seducers and errant husbands took refuge in the town.34 Beyond this elementary generalisation, however, the masses who tramped to the iron districts from Cardiganshire or the cadre of ironworkers who followed the Severn from Shropshire defy ready quantification.35 In the stead of more scientific
analyses, an isolated biography may be able to impart some sense of the mobility that drew people to Merthyr.

It is doubtful whether John Jenkins' life was in any way exceptional prior to his ordination as a Baptist minister in 1806. However, his subsequent eminence as a stalwart of Calvinist orthodoxy within Welsh Baptism has ensured that some reminiscence of his early years as a teenage migrant has survived. Jenkins was the son of farm labourer, born in 1779 at Llangattock in the low-lying valley of the Usk, fifteen miles to the east of Merthyr. After working on neighbouring farms in his early teens, he moved into the Hills and found employment in the mines and limestone quarries, first at Beaufort and then the Sirhowy ironworks. In 1796 he arrived in Merthyr for the first time and began work as a miner at Dowlais, and afterwards at Cyfarthfa.

Jenkins had already undergone believer's baptism in the previous year, and his religious affiliations enabled him to find lodgings with a fellow chapel member. However, this failed to shield him from temptation: he fell into bad company and into debt. In desperation, he took the bounty as a militia substitute to pay off his creditors. He was fortunate enough to be rescued by his family and friends, and the episode marked the beginning of a
recommitment to religion, one signalled by his debut as a Baptist lay preacher at the age of twenty. Thereafter, John Jenkins was set apart from the generality of young workmen in Merthyr by his stature as a precocious denominational leader. He accepted ordination after injury at work and indebtedness had spelt the end of his attempts to combine mining with farming on a smallholding rented from the Dowlais Company at Blaenmorlais.\textsuperscript{36}

A narrative, such as that of John Jenkins, can do no more than suggest the precarious and peripatetic character of working life in Merthyr. By the same token, deficiencies in data must condemn any account of plebeian culture in the town to be impressionistic. There is a general caveat which should be entered here. That is, that care should be taken not to conflate 'plebeian culture' with the scenes of degradation which came to be associated with criminal enclaves in the town. Although the riverside district of Pontystorehouse, or 'China' as it became known, was to gain a fearsome reputation, which coloured public perceptions of Merthyr, it was exceptional. As recent studies have made clear, 'China', with its prostitutes and professional criminal gangs, had a fairly short life-span. Its rise can be dated to the 1830s, and by the 1860s the 'Celestial Empire' was in terminal decay.\textsuperscript{37}
Given these necessary qualifications there remains one assertion which may be ventured: Merthyr showed nothing of a self-consciously urban culture in these years. After all, had not the place been stigmatised as sub-urban, a grossly inflated village? Merthyr took its colour from its newcomers, and these, all witnesses agreed, were overwhelmingly Welsh. Naturally, there was a leaven of English immigrants: the contingents from Shropshire and Staffordshire, and the enginemen who crossed the Bristol Channel from Cornwall, with the copper ore for Swansea's smelters. These groups were not without their significance; they were instrumental in linking Merthyr into the national iron industry, with its active circuits of manpower and technology. There were other 'English' influences; it was, for instance, the English forgemen who were housed in 'Row y Saeson' by the Homfrays, who introduced Wesleyan Methodism to Merthyr.

Nevertheless, the outward face presented by the iron town, in its cultural and linguistic aspects, was 'Welsh':

"The contrast between this and the English towns we had been used to, was very striking, [wrote a visitor in 1819] not a word of our own language could be heard, every thing was in Welch. The dress was different, all the women wore round hats in the same way as the men, a sort of bedgown with loose sleeves, and a dark or striped flannel petticoat, mostly without shoes or stockings".

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With the language and habits of rural Wales came many of the customs, including the 'ceffyl pren', the Welsh charivari.³⁹ A Merthyr carpenter was exposed to its rigours in 1805, after jilting his bride-to-be. On arriving at work:⁴⁰

"he was cheered by the loud huzzas of a numerous concourse of young women, who had assembled to chastise the culprit for his faithless conduct. After dragging him from the workshop, and giving him a complete coat of tar, they thickly studded him with feathers, mounted him on a plank, and carried him in triumph to the Church door... After he had been exposed sufficiently, the men who had assisted in the ceremony were about to withdraw, but the feathered deceiver fearing to be left alone with such a troop of furious amazons, bribed his male persecutors with half-a-guinea's worth of ale to escourt him in safety..."

Perhaps 'ceffyl pren' could not make a pristine translation to the new, urban setting. That the victim should have been able to terminate his ordeal in the way he did may imply that the custom, severed from its village context, was slipping from an implacable act of retribution towards a form of derisive street spectacle, which retained the brutality but was less burdened with moral weight. It would be rash, though, to overplay this, given the community sanctions which were enforced during Merthyr's 'June days' in 1831.⁴¹
In its characteristic manifestations, plebeian culture in Merthyr was self-contained and inward-looking. It was not centred on the different ironworks, nor on the village. Its gathering points were removed from under the easy surveillance of the ironmasters and the respectable portions of Merthyr's citizenry. One favoured point of assembly was Cefn Coed y Cymmer, the rocky tongue of land to the north of the Cyfarthfa works, at the confluence of the Taf Fawr and Taf Fechan. The two rivers divided the parishes of Vaynor and Merthyr, and the counties of Glamorgan and Breconshire. Cefn Coed, where the Cardiff-Brecon road crossed this jurisdictional frontier, was to acquire a certain local infamy. The other major site of popular assembly was Twyn y Waun, the high plateau to the south-east of Dowlais, nearly 1500 feet above sea level. The Waun was the venue for a historic fair which attracted dealers, showmen and thieves from far and wide, together with their respective customers, dupes and victims. Close by, at Pantywaun, was where Joseph Thomas Rees had felt he could erect his squatter cottage with impunity.

This was a socio-territorial distribution which signified separatism and distrust, not cohesion. The behaviour of the crowd during the riot of September 1800 reflected this. The rioters did not infest any of the works, or occupy any 'public space' in the village as an affirmation.
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of the legitimacy of their actions. There was no attempt to perform the ceremonies of justification, or the ritual approaches to local figures of authority which historians have identified as the accompaniment of 'classical' eighteenth-century food riots. At Merthyr there could be no 'negotiative process' between plebs and patricians, for there were no patricians. Instead, the crowd retreated to the familiar lairs of Cefn Coed, and then, as cavalry rode into Merthyr village, to the Waun, the abode of "the Men who are to be dreaded".42

These places were the sites of proletarian consumption and leisure. Contests of strength and stamina were common forms of recreation: brutal exhibitions of pugilism would draw large crowds (Hardinge deplored the "the rage of what is called Pugilism, converted into an article of taste, and a science"),43 as would foot races, the enormously popular bouts of dog and cock-fighting, and the baiting of bulls and badgers. All of this was accompanied by the taking of drink on a heroic scale. Alcohol was more than a form of relaxation, it was an ineradicable part of a life, as essential a component of work as it was of play. It was held to be a source of bodily strength and endurance, and was taken in regular and substantial draughts. This was true of most forms of labour, but in the enervating heat of the casthouse and forges the threat
of dehydration was an inducement to tippling of massive proportions.44

Drinking continued outside the precincts of the works with still greater gusto. In fact, it would be wrong to insist on a sharp differentiation between 'work' and 'leisure'. The pub was often an organising centre for work, where particular categories of labour would congregate, and to which they would repair for payment, collective celebration and dissipation.45 Some men straddled the always flimsy divide between these different spheres of life: Joseph Hunter, for example, doubled as a miner and the landlord of the Swan in the village. Yet such was Merthyr's thirst, it could not be satisfied in licensed houses such as the Swan: it supported a parallel network of illicit suppliers.

Brandy smugglers made regular appearances in the Hills, where the weakness of authority enabled them to elude the excise with ease.46 More numerous were unlicensed ale-sellers, who had the advantage of being engrained in the plebeian community. A minor purge on offenders in March 1791 netted, amongst others, three labourers, two masons, two 'yeomen', a butcher, and a miner.47 The tone of their establishments would not have differed much from the sort of legally-sanctioned alehouse presided over by Joseph
Hunter. Indeed, some of those convicted in 1791 had their houses licensed the following year. The pub, as R.W. Malcolmson has noted, was "something of a sanctuary from the intrusions of genteel tastes, and thus its cultural character could be very much of the people's own making and fashioned in accord with their own desires and traditions". At Merthyr, genteel tastes were never much in evidence, and the restraints upon alehouse life were correspondingly slender. Justice Hardinge was moved to "lament that that public houses are not under a more strict and vigilant police...they are converted, I fear, into riot and mischief, almost every day that such houses are opened in this neighbourhood".

The ironmasters, as magistrates, did exercise jurisdiction over alehouses, but in this, as in so much else, they were badly compromised by chronic divisions among themselves. They imputed "interested and corrupt motives" to each other in the granting of licences, and held rival meetings for that purpose, issuing discreet notices of the advantages of applying at their 'shop'. The power of dispensing licences afforded the ironmasters some leverage in parish politics, and each of them acquired a handful of clients among the town's victuallers. Crawshay, for example, connived with James Sutton, landlord of the Crawshay Arms [sic], and Thomas Turley, the Merthyr
Yet ironmasters' interest in the licensing of premises was confined to buttressing their power in local politics. They were unconcerned with exercising a closer surveillance over the more raucous aspects of plebeian life. In fact, they made little impression on any aspect of the alehouse milieu. Their absence is notable from the one institution which left any documentary record of its existence in an environment where oral expression took precedence: the benefit club.

The club was a crucial agency of working class survival and solidarity. A "shilling to the box and 2d for ale", one formula for the monthly contribution, expressed well the dual attraction of the club. It provided both the fellowship of the pub, and support in the event of sickness or injury. It would also seem that during the war years after 1793 the club played an important role in providing money to hire a substitute for any member who was ballotted for militia service. With little more than the standard certification which was submitted to the clerk of the peace (in accordance with Rose's Act of 1793) as a guide, it is not possible to trace the profile of a club's membership or to identify its stewards. Nor is it plausible to reconstruct the ambience of society meetings in the back room of the Greyhound or the Iron Bridge. However, what can be asserted with some
confidence is that a very significant proportion of the local population was convened in these clubs.

Fifteen clubs, with a combined membership of 1,874, were recorded in the parish in 1803. By 1813 a total of 3,281 members were distributed among an unspecified number of clubs. These sample years do not coincide with the taking of the census, and the scope for imperfection in both the census enumeration and the collecting of returns relative to friendly society membership should be born in mind. Even so, a rough comparison of club rolls with the available population figures would suggest that membership approximated to a quarter of the total population of the parish. This extraordinary proportion suggests that the clubs covered a majority of the adult population. And the rate of participation in clubs was keeping step with the explosive growth of population. Total membership in Merthyr parish increased from 3,281 at Easter 1813, to 4,115 at Easter 1815 - an increment of 25.4%, and one that is all the more remarkable when it is remembered that these were times of lay-offs and wage reductions in the iron industry, when members were hard pressed to keep up their payments.

While allowance must be made for the probability that some individuals were members of more than one club, and so
were registered twice, the impression which remains is of the ubiquity of the benefit club. Yet the ironmasters were almost entirely absent from this busy field of self-organisation in the town. The name of an ironmaster (Richard Crawshay) appears on only one of the fifty-five bonds submitted by club treasurers between 1796 and 1815. More usually it was 'yeomen' of the parish, petty gentlemen of the district, farmers, tradesmen, or dealers who posted the necessary sureties.

There was just one initiative by the ironmasters which broke the pattern of abstention. That was their sponsorship of volunteer corps in the wake of the invasion scare of 1797. The landing of a small French force on the Pembrokeshire coast in February 1797 galvanised Richard Crawshay. He set his smiths to making pikes, and prepared to "enroll as many [Cyfarthfa workmen] as will enter their Names...and...march them to the place required under the Clerks and Foremen they are accustomed to Work under". Corps were formed at Cyfarthfa, Penydarren and Dowlais in the following year. At Dowlais, as at Cyfarthfa, it was intended that the chain of command should mirror the hierarchy within the works. "I think it quite necessary", Taitt wrote, "that the Corps shou'd be under the Command of the Manager of the Works". Thomas Guest was to be the senior officer, with Edward Edmunds, the works
cashier, as ensign; membership of the corps was to be compulsory for the Company's workmen. Here was an opportunity for the ironmasters to combine patriotism with pragmatism, since those workmen who mustered with the volunteers were automatically exempted from service in the militia. In effect, the volunteer corps enabled the ironmasters to prevent the dispersal of their workforce. But even here, the masters showed a wariness in imposing their aim. William Taitt decreed that four Dowlais volunteers, who returned their weapons and uniforms in March 1799, were to be sacked, provided, he added, they "are not very Material Workmen".

The policy of not unnecessarily affronting workmen was adhered to with good reason. For on one occasion, when the ironmasters imposed a pattern of behaviour which (albeit unwittingly) ran counter to the habits of their workforce, their initiative was attended with riotous consequences.

The central problem of Merthyr's development as an urban community was the equivocal commitment of the ironmasters in the town's affairs. They oscillated between engagement
and abstention, with a decided preference for the latter. But they were unable to adhere to any one, stable position. Merthyr demanded a dynamic, not a static approach: self-preservation obliged the ironmasters to respond to rapidly changing circumstances. This can be seen in their grappling with the cumulative crisis which found its most dramatic expression in the rioting that swept Merthyr in September 1800.

A full narrative of the September events is available elsewhere, but a brief recital here will endorse and extend the pertinence of the analysis above. For it is apparent that the disturbances, which broke out on the morning of 23 September 1800, owed as much to the peculiar urban context of Merthyr as to the fact of famine. Of course, it is indisputable that dearth was the crucial component of the crisis. The failure of that year's harvest - the second in succession - made September 1800 one of the most riotous months in British history. The shortage was keenly felt throughout the South Wales region, and was productive of many crowd actions attempting to retain supplies for local consumption. Townspeople halted the movement of grain from the market at Swansea; and to the east, Forest of Dean colliers proved especially active in intercepting the Bristol-bound shipments of grain which passed down the Wye. This
regional dimension had an important influence on the course of events in Merthyr. The ironmasters were haunted by the prospect of the rioting at Merthyr acting as a call to arms for the whole of South Wales, and an awareness of the fragility of order elsewhere inhibited the movement of the militia and regular troops to suppress the crowd.

Even so, while it is necessary to situate events at Merthyr within a national crisis in the autumn of 1800, the issue of subsistence at Merthyr was no episodic matter, which awakened concern only after a poor harvest. The new industrial settlements in the Hills endured a permanent regime of shortage and high prices. Only the intervention of the ironmasters, with their superior logistical resources, averted starvation. The chronology of their intervention has already been noted. The inadequacy of the 1792 harvest triggered the first large-scale emergency shipments of flour, and arrangements for provisioning the ironworks seemed to have taken on an institutional form in the mid-1790s. These efforts met with success. The lean years of 1794-96 saw no serious disturbance at Merthyr, although other regions were wracked by consumer protest.

The contrast between the quiessence of the mid-1790s and the upheaval of 1800 is very striking. It suggests that
an explanation for the riotous actions of 1800 cannot be sought wholly in the price index of flour and other basic foodstuffs. The stimulus to crowd action in September 1800 was as much the participants' experience as producers in the ironworks as their fortunes as consumers.

A sharpening antagonism at work is certainly detectable in the years immediately prior to 1800. The marked price inflation of the 1790s encouraged workers to seek increased piece rates, like the Penydarren puddlers who struck for "an advance of 2/- a ton on Blooms" in February 1797. Yet, while the upward spiral of prices in the late 1790s cut into earnings, the ironmasters found conditions to be favourable for a fresh wave of expansion. The imposition of higher tariffs on imported iron in 1796, 1797 and 1798 generated new demand for the domestic product, and the opportunities open to British ironmasters were added to by the deteriorating relations between Britain and the Northern Powers, which threatened a complete breakdown of trade. The consequent growth of output at the Merthyr works induced the ironmasters to hold down, if not cut piece rates. "Rees Thomas & Wm Edmonds have been Air Furnace Men here for some years", Crawshay reported in the spring of 1797:

"& by our encreas'd make of Iron was at 7d. a ton making such excessive Wages as are Scandalous for us to pay--it was propos'd to
give 'em 20/- a Week each & 5/- each for a Lad to Assist them[.]. they have stood out for more".

Crawshay was not alone in his concern. At Dowlais, William Lewis had already warned Robert Thompson that "unless care is taken not to squander away Money in labour Coak Furnaces will never make us rich". The leap in productivity in the last years of the eighteenth century - the accompaniment to a rush of investment in new plant - undercut the rationale of a range of customary perks and bonuses. Hence the ironmasters' determination to abrogate customary understandings such as the furnace crew's 'guinea', or at the very least to modify radically the terms on which it was awarded. In addition, the Merthyr ironmasters were concerned to tighten their grip on the conduct of work in their mineral excavations. They were, of course, parties to the 'Act for the Security of Collieries and Mines' of 1800, with its avowed aim of curbing fraud and indiscipline among colliers and miners.

* * *

The riot of 1800 occurred in the middle of a period of tension and antagonism within the workplace, stretching from the late eighteenth into the early nineteenth centuries. What made this offensive in the sphere of
production so provocative was its imbrication with sensitive issues of consumption. At the same time as the Dowlais partners tried to rescind the guinea, they sought to switch from a weekly to a monthly pay: "which will save us 3 broken days in the Month besides those drunken combinations". 67 This adjustment, quite apart from reducing the number of pay days and the famously uproarious celebrations with which they were marked, was extremely unwelcome at a time of wildly fluctuating prices. The Dowlais Company also opened a works shop in the spring of 1799, and began to make payments in credit notes. The Company partners regarded the opening of their shop as a favour to their workforce, and hoped it would attract new labour into the area. However, it could also be construed as an attempt to limit consumer choice. The same suspicions arose at Penydarren. Homfray already operated a monthly pay, but he was requested to revert to weekly payment. He complied, but payment was made in copper tokens which could only be redeemed at his company shop.

It was this that contemporaries identified as the catalyst of riot. The grand jury at the Glamorgan assizes the following spring were incensed by what they understood to be a brazen - and spectacularly maladroit - attempt by Homfray to cheat his workmen. In this, the jurymen
reflected the fury of the ironmaster's own workmen, who, Hardinge reported, were "as clamourous against him as if he had cheated & oppresst them by this mode of accounting with 'em". The first inklings of trouble came on Saturday, 20th September, when the crowd seized weights and measures from dealers in the village marketplace, and, it was alleged, found scarcely one to be accurate. However, when disturbances began in earnest on the following Monday, September 22nd, the shop which Morgan Lewis ran on behalf of the Penydarren Company was the unambiguous target. At four o'clock in the afternoon George Lyndon wrote an urgent note to Homfray, who had left Merthyr that morning to attend the election of the corporation bailiff at Brecon:

"The Riot is now at such a height that twill be impossible to Quell it without the Assistance of the Military--Morgan Lewis Shop is totally demolished the Goods taken out & carried away--& what will be the end nobody knows--Immediate assistance must be had--I fancy 2000 People are at present doing all the Mischief they can Morgan Lewis shop is not the only one destroyed--They have stop'd everything at Cyfarthfa & Penydarran but the Furnaces".

After sacking the most obnoxious of the village's shops and terrorising the respectable citizenry, the crowd toured the landmarks of plebeian Merthyr. Recruits were taken from the throng who were in attendance at the Waun fair, and other reinforcements arrived in the form of groups of workers who had marched from the Sirhowy and
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Beaufort ironworks to the east. The augmented crowd then took refuge over the county border at Cefn Coed.

By noon on Tuesday, 23rd September, one of Homfray's agents had to report that "Affairs...wear A Still More Dreadfull and Alarming Aspect". The crowd at Cefn Coed was undiminished in number, and preparing to sally forth after reports had reached them of a resumption of work at Penydarren, "threaten[ing] Immediate Death to any found at Work". The events of the previous day had already had effect. Thomas Guest had saved the Dowlais works shop from destruction by a timely reduction of prices, while a deputation of Merthyr's tradesmen waited on the crowd to hear their demands. With no prospect of military assistance, the shopkeepers had little choice but to sign a declaration "to fix the price of Provisions which was Flour at £2.15.0 pr. Sack Butter 8d pr lb and Cheese 6d pr lb". According to Homfray this was just the prelude to a campaign to impose the same price schedule on other markets: "the Mob...had actually sent down and posted up Papers the Most violent and determined that could be penned at Caerfilly threatening destruction...if the Shops there did not sell at the rate fixed at Merthyr".

The arrival of Samuel Homfray with a troop of dragoons on Wednesday, 24th September, signalled the beginnings of a
return to order. The cavalry made a show of force in the
centre of the town, allegedly slicing a dog in two with a
single sabre stroke, in a pointed display of military
prowess! Homfray imposed a curfew, and began to seize
suspected ringleaders, committing 23 prisoners to Cardiff
gaol in the course of the next two days. But it was not
until the following day, the Thursday, that he felt
confident enough to revoke the price schedule which the
shopkeepers had signed two days earlier.

Overleaf - disorder and repression in Merthyr: troops
dispersing strikers during the disturbances of 1816, as
seen through the juvenile eyes of Penry Williams. This,
presumably, is a representation of events on the afternoon
of Saturday, 19 October 1816, when a crowd of several
thousands assembled before the Castle Inn, where the
ironmaster-magistrates were barricaded. After refusing to
accede to the strikers' demand for a restoration of
earlier wage rates, the ironmasters read the Riot Act.
Soldiers of the 55th Regiment and the Swansea Calvary then
cought the crowd unawares, and put them to flight without
bloodshed.
Homfray's belated exertions could not deflect the storm of criticism over the method of payment he had adopted prior to the riot. However, when justice Hardinge made private enquiries into the matter, he came to the conclusion that Homfray had been quite unjustly censured: 73

"I have strictly & closely interrogated him upon all ye circumstances respecting those copper-tokens & I declare in my conscience that a more shameful perversion of truth never hunted an individual down than in his case I not only think him blameless but highly meritorious in that arrangement".

Hardinge accepted Homfray's assertion that the prices at the Penydarren shop had actually been cheaper than in other village stores. The substance of the ironmaster's scheme for provisioning his workmen had then, the judge decided, been unobjectionable, but "he ought in sound policy to discontinue the shape of it which...made the popular cry against him". It was the 'shape of it' that caused offence.

The company shops incurred the odium of the workmen in 1800 because the obligation to trade at them was an erosion of the independence they enjoyed vis-a-vis their employers. Although the ironmasters impinged upon the independence of their workers in a way which they (the ironmasters) considered to be ameliorative, their workers had every reason to view such erosion with suspicion.
They had already experienced a determined effort by the ironmasters to infringe established standards in the sphere of production, and, when the process was seen to invade the sphere of consumption, their resentment could take explosive shape. The same resentment was reflected, eight months after the riots, in a petition submitted to the Dowlais Company by its furnace fillers. The fillers made two demands. Firstly, they wished for a revision of their piece rate: "our price one the mottle that the furnass shall Run of all kind Two be Six Pence per Tun". Secondly, they wanted "two have 3s per week of Silver to Go to market to lay it ought to the Best Advantage". It is this second demand which is illuminating. In part, they were content to trade at the Dowlais store, but a portion of their wages they would have in coin, to dispose of as they saw fit, independently of their employers.

* * *

While an impulse toward riot can be located in the work relations obtaining between ironmasters and men in the last years of the eighteenth century, it was certainly not the sole causal factor. Samuel Homfray, who, assailed on all sides, had ample reason to uncover the causes of the riot, was quick to suggest another. "I am very apprehensive this sudden commotion is owing to political
principles".\textsuperscript{75} As proof, he cited the presence of "Mr. Thelwall [who] has lately been at times in our Neighbourhood in diff.\textsuperscript{t} Characters & no doubt doing that which he ought not".\textsuperscript{76}

This was John Thelwall, former stalwart of the London Corresponding Society, and the greatest of the English Jacobins. The deadening repression of the late 1790s had ended his public advocacy of root-and-branch democratic reform, but in other respects he remained an undaunted adversary of the old regime. He had 'retired' to Llyswen, a village on the Wye, some twenty-five miles to the north-east of Merthyr, in the expectation that rustic seclusion would prove congenial to the development of his literary and social thought. Thelwall did not, however, take naturally to contemplative isolation, for all its 'romantic' cachet. An eagerness to forge new contacts led him to seek out those who were "notorious for their seditious sentiments"\textsuperscript{77} in the surrounding districts. It was a continuing, albeit modified, political engagement that prompted Thelwall to include Merthyr on his wanderings through the region.\textsuperscript{78}

According to Homfray, Thelwall's malign influence could be felt behind the agitation over food prices:\textsuperscript{79}
"on Saturday when the cryer proclaimed in the public Markett a Meeting of the Workmen of the four Works near Merthyr for taking into consideration the high price of Provision Mr. Thelwall was at no very great distance..."

Unfortunately, what little evidence there is concerning Thelwall's activities in the area is of this cryptic kind. Other instances of political disaffection at the time of the riot can be inferred, but their documentation is allusive rather than explicit in character. Some record was made of Thomas Morgan of Gelligaer, committed by the magistrates on 25th September "for Crying an unlawful Speech at Merthyr", but his arguments and exhortations have been lost. Despite the evidential problems inherent in dealing with a largely clandestine tradition, it is clear that the expression of subversive sentiment during the September events represented more than a momentary and superficial politicisation. There is other evidence which points to a persistent and rooted radical tradition in the area. It was a current which became visible again the following spring, when a Jacobin manifesto was scattered through the iron district, inviting readers to "rescue ourselves and the succeeding Generation from the most daring, insulting and atrocious Tyranny". This was a tradition of some resilience and liveliness, capable of tempting a figure of Thelwall's stature into investigating Merthyr and its Jacobin milieu.
Its formation and fortunes are to be the subject of the next chapter.

1 See Jenkins, p.247, for urban improvement in other Glamorgan towns. And for a wider comparison, F.J. Corfield, The Impact of English Towns, 1700-1800 (Oxford, 1982).

2 Wood, Rivers of Wales, I., p.57.

3 PRO E 112/2094/73, proceedings of Isaac Wilkinson's complaint vs Lewis Edward, Abraham Evan and William Evan, colliers of Merthyr.

4 PRO C 12/1029/31.

5 BL Add. Ms. 38347 fo.9, 'Examination of Mr. Richard Crawshay & Mr. Joseph Stanley 11th August 1786'. Cf. NLW 15534E fo.97, R. Hill to S. Hughes, 27 December 1786.


7 NLW Maybery 2466, R. Hill to J. J. Howell, 5 August 1793.


9 GRO D/D Pw 2, 'Articles of Copartnership Quadrupartite'; NLW Maybery 211, release dated 3 March
Endnotes to Chapter Nine
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1 See Jenkins, p. 247, for urban improvement in other Glamorgan towns. And for a wider comparison, P.J. Corfield, The Impact of English Towns, 1700-1800 (Oxford, 1982).

2 Wood, Rivers of Wales, I, p. 57.

3 PRO E 112/2094/75, proceedings of Issac Willkinson's complaint vs Lewis Edward, Abraham Evan and William Evan, colliers of Merthyr.


5 BL Add. MS. 38347 fo. 9, 'Examination of Mr. Richard Crawshay & Mr. Joseph Stanley 11th August 1786'. Cf. NLW 15334E fo. 97, R. Hill to S. Hughes, 27 December 1786.


7 NLW Maybery 2466, R. Hill to W. & J. Powell, 5 August 1793.


9 GRO D/D Pe 2, 'Articles of Copartnership Quadrupartite'; NLW Maybery 211, release dated 3 March 1967.
1785; GRO D/D G 1793 P-W fo.503, W. Taitt to R. Thompson, 14 August 1793. William Morgan also leased Gwailodygarth farm to Samuel Homfray, on which the latter built Penydarren House: GRO LTA/CAE/15, land tax assessment for Garth hamlet, 1800.

10 GRO D/D G outletters 1782-94 fo.613, R. Thompson to W. Taitt, 28 October 1793.

11 GRO Pe 3(a), 'JHs Complaints against SH Novr 1796'.

12 Wilkins, p.245.

13 Manners, Journal, p.66; GRO D/D G outletters 1782-94 fo.518, R. Thompson to W. Taitt, 8 March 1793. See J.B. Lowe, Welsh Industrial Workers Housing, 1775-1875 (Cardiff, 1977), p.28, for a photograph of the three-room houses built c.1800 for Crawshay at Rhydycar, on the side of the Glamorgan Canal. This terrace, inhabited until the 1970s, is currently being re-erected at the Welsh National Folk Museum, St. Fagans, Cardiff.

14 "We first saw, and entered one or two of the workmen's houses, which he [Crawshay] had built for them...they are extremely neat and clean". Manners, Journal, p.66.

15 GRO Q/SR 1797 C fo.49, appeal against the rate assessment for the hamlet of Gellideg, 1 July 1797. This compares unfavourably with the 450 houses built in the first decade of the nineteenth century for the workforce of the far smaller Wilsontown ironworks in Scotland. See I. Donnachie & J. Butt, 'The Wilsons of Wilsontown Ironworks: A Study in Entrepreneurial
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16 GRO D/D G 1810 A-S fo.62, D. Davies to J.J. Guest, 1 May 1810; Cambrian, 7 March 1807.


18 Wood, Rivers of Wales, I, p.57.


21 J. Wilkes & G. Barfoot, The Universal British Directory (1795), sub Merthyr.

22 There was only one serious rival - the Crown, opened by James Roberts, a local Dissenter, in 1785.


GwRO D2.162 fos.96-98, RC to J. Cockshutt and W. Lewis, 14, 22 & 30 April 1791.

In the early 1790s the ironmasters hoped to install a landlord of their own choosing at the Crown Inn as a competitor to Peggy Jenkins (d.1808), the doughty if slapdash matriarch who ran the Star. Each Company pledged £70 to their nominee, but little more was heard of the proposal thereafter, (GRO Pe 3(a), GRO D/D G outletters 1782-94 fo.625, R. Thompson to W. Taitt, 25 November 1793). Similarly, after some initial enthusiasm, the ironmasters pulled out of a tontine scheme to fund a new and superior inn near Jackson's Bridge in 1805, (GRO D/D G 1805 T-W fo.474, W. Taitt to T. Guest, 2 August 1805; *Cambrian*, 5 October 1805).

BL Add. MS. 38229 fo.32, R. Crawshay to Lord Hawkesbury, 6 May 1793.

BL Add. MS. 38229 fo.36, R. Thompson to R. Crawshay, 13 May 1793; GRO D/D G 1793 P-W fo.525, W. Taitt to R. Thompson, 2 November 1793.

GRO D/D G 1801 B-T fo.405, W. Lewis to T. Guest, 29 May 1801.

NLW Maybery 3752, T. Guest to W. & J. Powell, 14 December 1794. "In the early nineteenth century, in
both industrial south-east and rural south-west Wales, squatters used to try to build a house and get a roof on within twenty-four hours in the belief that this conferred freehold. Challenged in court by irate landowners, they cited the Law of Hywel Dda"; G.A. Williams, *When was Wales? A History of the Welsh* (Harmondsworth, 1985), p.92.

31 CCL MS. 2.716(1/3) fo.12, 23 August 1790.

32 William Paley (1743-1805), Archdeacon of Carlisle and a leading conservative theorist, was a prolific pamphleteer during the 1790s.


34 "Virtually all towns contained a majority of women, reflecting the relatively greater range of job opportunities for them in the towns as compared with the countryside", Corfield, *English Towns*, p.99. But at Merthyr it was men who dominated. The disparity had narrowed by 1811, when women accounted for 46.9% of the parish population, but widened again by 1821 when their proportion slipped to 45.1%

35 The difficulty lies mainly in the exceptional local weakness of the Anglican Church, the major, pre-census agency through which demographic information happened to be gathered and ordered. Carter and Wheatley, *Merthyr Tydfil in 1851*, provide data based on the 1851 census, but it cannot be assumed that migration patterns remained constant between the mid-nineteenth and late eighteenth centuries.

Community and Riot


40 Cambrian, 7 September 1805.

41 See Williams, Merthyr Rising, especially chapter 4, pp.109-25.


43 Hardinge, Works, I, p.73. Cefn Coed was "in its early life, a notoriously wicked place, for here lived the chief pugilists, racers and gamblers, of the whole district", W. Morgan, Vaynor Handbook (Merthyr, nd), p.6.
Community and Riot


46 For example, GRO D/D G 1805 A-S fo.339, J.J. Jones to ?, 20 April 1805.

47 GRO Q/SR 1791 B fos.8-21.


49 Hardinge, Works, I, p.73.

50 PRO KB 1/35 Michaelmas 1808/19, affidavit of J. Goodrich, R. Williams & W. Taitt; Cambrian, 18 February 1809.

51 Cambrian, 28 April & 5 May 1804, 15 October 1808; GRO D/D Pe 31, will of Richard Crawshay.

52 GRO D/D G 1795 L-V fo.394, W. Taitt to R. Thompson, 27 March 1795; 1803 R-W fo.681, W. Taitt to T. Guest, 17 July 1803; 1811 B-W fo.147, W. Taitt to J.J. Guest, 10 September 1811.

53 Sureties for club treasurers, delivered to the clerk of the peace, are filed in the Glamorgan Record Office, (GRO QDF).

54 Figures taken from BPP 1803-04 XIII, pp.690-1, and BPP 1818 XIX, pp.616-17, (Abstracts of Returns Relative to the Expence and Maintenance of the Poor).
According to W. Davies, *General View*, there were 29 clubs operating in Merthyr in 1811, seventeen with a male membership, twelve with female, each with between 100 and 200 members, (II, pp.467-8). An important recent study, (D. Jones, 'Did Friendly Societies Matter? A Study of Friendly Society Membership in Glamorgan, 1794-1910', *WHR*, XII, 3 (1985), pp.324-49), argues that friendly societies penetrated South Walian society more deeply than either chapels or trade unions in the nineteenth century.


57 GwRO D2.162 fo.218, RC to R. Williams, 9 March 1797.

58 GRO D/D G 1799 B-W fo.378, W. Taitt to T. Guest, 29 April 1799.


62 The development of the crisis across Britain is detailed in R. Wells, Insurrection: The British Experience, 1795-1803 (Gloucester, 1983), pp.178-84.

63 D.J.V. Jones, 'The Corn Riots in Wales, 1793-1801', WHR, II, 4 (1965), pp.335-50. See also Gloucester Journal, 7 April 1800 for incidents along the Wye, and PRO HO 42/61 for letters from magistrates relating to tumults in the Forest of Dean during March 1801.

64 GwRO D2.162 fo.215, RC to J. Wilkinson, 15 February 1797.

65 GRO D/D G 1797 C-W fo.209, R. Crawshay to Dowlais Company, 13 May 1797.

66 GRO D/D G 1797 C-W fo.243, W. Lewis to R. Thompson, 31 March 1797.


68 PRO HO 42/61 fo.528, G. Hardinge to Duke of Portland, 11 April 1801.

69 PRO HO 42/51, G. Lyndon to S. Homfray, 'Monday 4 o'Clock' [22 September 1800]. In one of the few specific charges made in the wake of the riot, John Lewis, a miner, was committed for riotous assembly "and also for the breaking of the shop windows of Saml. Homfray and Morgan Lewis", GRO Q/SR 1801 A (unsorted), 'A List of Prisoners confined in his Majesty's Gaol at Cardiff'. Lewis was convicted at
the Epiphany quarter sessions; he was fined ten shillings and sentenced to three months imprisonment, GRO Q/SI 4, fo.357.

PRO HO 42/51, J. Thompson to S. Homfray, 'Tuesday Noon' [23 September 1800].

PRO HO 42/52, S. Homfray to Duke of Portland, 1 October 1800.

Wilkins, p.138.

PRO HO 42/61 fo.559, G. Hardinge to Duke of Portland, 14 April 1801.

GRO D/D G 1801 B-T fo.373, petition to T. Guest, 21 July 1801.

PRO HO 42/51, S. Homfray to General Rooke, 24 September 1800.

PRO HO 42/51, S. Homfray to ?, '6 o'Clock Tuesday' [23 September 1800].

PRO HO 42/43 fo.39, R. Gwynne to Duke of Portland, 25 April 1798.

Several copies of 'An Address to the Workmen of Merthyr Tydvill' are in PRO HO 42/61. One version is reproduced as an appendix to Jones, 'Merthyr Riots', pp.174-5.

"Very few communicants, not above ten or twelve at most, more is the pity, the occasion whereby is our having a great number of Dissenters, who before the Grand Rebellion were not so many, but in those unhappy times of usurpation multiplied space, and overspread this part of the Country every way."

The evocation of the 'Grand Rebellion,' was more than an alarming gesture on the part of a beleaguered priest. Because the heterodox at Merthyr could trace an unbroken lineage back to the Servant-Puritans of the Interregnum, the political overtones of schism from the Established Church were always to be unusually strong. So when political radicalism reigned in the late eighteenth century, aroused by revolution in America and France, the call of liberty was to find many receptive audiences in Merthyr.

Moreover, the unleashing of revolutionary energy across Europe — and beyond — in the 1790s, coincided with the...
Chapter Ten
The Mutations of Merthyr Radicalism

The mainspring of political radicalism in Merthyr was the abiding local strength of religious Dissent. This was made plain in the sorrowful report of the parish's Anglican rector in 1763. He regretted that the Established Church could boast:

"very few Communicants, not above ten or twelve at most, more is the pity, the occasion whereof is our having a great number of Dissenters, Who before the Grand Rebellion were not so many, but in those unhappy times of Usurpation multiplied apace, and overspread this part of the Countrey every way".

The evocation of the 'Grand Rebellion' was more than an alarmist gesture on the part of a beleaguered priest. Because the heterodox at Merthyr could trace an unbroken lineage back to the fervent Puritanism of the Interregnum, the political overtones of schism from the Established Church were always to be unusually strong. So when political radicalism revived in the late eighteenth century, aroused by revolution in America and France, the call of liberty was to find many receptive hearers in Merthyr.

Moreover, the unleashing of revolutionary energy across Europe - and beyond - in the 1790s, coincided with the
first great spurt of growth at Merthyr's ironworks. In consequence, the district's received radical tradition entered a new political environment. This new world, defined by the iron industry, was rich in possibilities. It also posed a challenge: it obliged Merthyr's radicals to negotiate a complex set of ideological and practical cross-currents, generated by the tumultuous growth of the iron industry. New patterns of economic activity and human settlement had appeared, yielding problems for which there was no precedent. The success and the shortcomings of Merthyr's dissident heritage in confronting these problems is assessed here.

During 'those unhappy times of Usurpation' in the mid-seventeenth century, the rage of religious radicalism had been intense in the Glamorgan Hills, spawning heresies right and left. The reaction after 1660 was correspondingly fierce, as was attested by the twenty-four ejections in the county in 1662, the most for any Welsh county.2 Merthyr's Dissenters retreated to a conventicle at Cwmyglo, on the slopes of Aberdare mountain, to the west of the village. Here, they endured the post-Restoration persecution with Cromwellian intransigence,
aided by their seclusion in the Hills, where the power of the vengeful Vale gentry was at its most exiguous. The original Dissenting cell was eventually dispersed, not by the penalties of the Clarendon Code, but by the fissiparous theological developments of the eighteenth century. Cwmyglo shared in the slippage from Calvinism to Arminianism, and thence to anti-trinitarian heresies, that was discernible nationally from the 1720s. At Merthyr, the battle-lines were drawn up at an early date. When James Davies (d.1760) was ordained minister at Cwmyglo in 1724, his unyielding Calvinism was confronted by an already-entrenched Arminian caucus. The latter demanded its own access to the pulpit, and triumphed in 1738 when its candidate, Richard Rees (1707-49), freeholder of Gwernllyn Uchaf, was ordained as co-pastor. Attempts at comprehension proved futile, for the congregation fractured apart in the late 1740s. Richard Rees lead an exodus to a new chapel at Cefn Coed in 1747. Two years later Cwmyglo suffered a further Arminian secession when worshippers from the neighbouring Cynon valley withdrew to their own meeting at Trecynon, Aberdare. The Calvinist core of the old congregation, beset by schism, and without a secure lease for Cwmyglo, abandoned the historic site and built a new meeting house at Ynysgau, on the northern edge of Merthyr village.
The disintegration of Calvinist orthodoxy continued apace in the second half of the eighteenth century. The return for the Diocesan Visitation of 1763 portrayed steadfast Calvinists as a rump. Of nearly forty families then living in the village, three-quarters were Dissenters, "professing themselves for the most part Arminians, with a few Calvinists, and fewer Anabaptists, and among all these I am afraid too many Deists". For many, Arminianism was only a staging-post on the path to more extreme doctrines. The seceders at Cefn Coed rapidly embraced Unitarianism; their brethren at Aberdare followed suit. At Ynysgau, old James Davies tried to staunch the anti-Calvinist flow, though with scant success. The advance of theological liberalism seemed inexorable. Davies was marginalised in his last years, while his son and pastoral heir, Samuel Davies (d.1781), succumbed to the newer currents, and was borne along to the frontiers of Arianism. By the 1790s, the heretical atmosphere at Ynysgau was intolerable to immigrant Independents who were accustomed to orthodoxy, and they seceded to form a new congregation at Zoar.

Other sectors of Old Dissent sloughed off their Calvinism in identical style. Welsh Baptism, doctrinally quiescent for decades, was increasingly disturbed by controversy in the last quarter of the eighteenth century. Critics of the Confession of Faith, with its affirmation of the
Trinity, opened an unfolding critique of authority in Church and State. Advocacy of religious libertarianism in the denomination reached its height in the 1790s, when the orthodox majority were briefly outflanked by polemists like William Richards (1749-1818), the Welsh exile in Lynn, or the still more radical Morgan John Rhys (1760-1804), the minister-journalist of Pontypool, who espoused a militant republicanism that drew its potency from a reading of the Book of Revelation. Rhys's apocalyptic temper hastened him towards an identification of the British state as anti-christian and illegitimate in all its manifestations. Salvation could come only through a root-and-branch abjuration of all existing authority, a flight from Babylonian oppression, and so, in practice, a programme of mass emigration to the American Republic.  

The efflorescence of Baptist radicalism, always a minority taste, was brief. Morgan John Rhys sailed for America in 1794, to pursue his quest for a new Welsh homeland in the Ohio valley, while William Richards and his confederates were silenced by the storm of anathemas and expulsions that issued from the Welsh Baptist Associations in the late 1790s. Even so, the political turmoil which had agitated the sect did not leave the small knot of Merthyr Baptists unmoved.
The denomination had been implanted in the district by Walter and Elizabeth Davies of Gwernllwyn Isaf, who had licensed their farmhouse for Baptist worship in 1770. In 1789, Welsh Baptism took on a tangibly institutional form with the foundation of Zion chapel. Yet, as the stone and mortar of the new chapel rose in the village, discord cracked the congregation open. In 1792, the Reverend William Lewis led a group of thirty conservative dissidents out of Zion to constitute a new chapel at Ebenezer. However, the secession did not fatally weaken the radical impulse, for in 1801 justice Hardinge could report that Morgan John Rhys's call for a march out of spiritual and political bondage was still echoed about Merthyr: "ye anabaptist is almost by system in Wales recommending Emigration".

The vitality of Old Dissent in Merthyr renders nugatory the assumption that a collapse of pastoral stewardship on the part of the Establishment was the precondition for the growth of Dissenting congregations. The standard view, concerned essentially with the eighteenth-century revival, has long been that the spiritual torpor and organisational inertia of the Anglican Church were fatally exposed by the fervour of revivalism and the indefatigable energies of its proponents. Yet the dominance of Dissent at Merthyr cannot be explained merely as a function of Anglican
Merthyr Radicalism
decay. While contemporary observers were alert to the
extent of clerical non-residence and identified it as the
most egregious feature of the Merthyr district - "The
Sheep (as Milton says) 'look up & are not fed' but the
disserter finding it a deserted post usurps the office"\(^{12}\)
- the hollowness of Anglicanism remains an unsatisfactory
explanatory device.

The Establishment, regardless of its own vigour,
confronted a robust strain of Dissent in the Hills, one
stemming directly from a seventeenth-century Puritan
tradition. Such was the strength of this tradition that
it defeated the evangelism of the eighteenth-century
revivalists as surely as it had eclipsed traditional
Anglicanism. Old Dissent effectively excluded the New.
Indeed, the paucity of Wesleyan - and especially
Calvinistic Methodist - assemblies in the town has been
remarked upon.\(^ {13}\) Twelve petitions for the licensing of
Dissenting meetings issued from Merthyr between 1792 and
1815. Six came from Independent congregations, four more
from Baptists. Wesleyan Methodism could muster just one
application, the Calvinistic Methodists none at all.\(^ {14}\)

In contrast to the great mass of Merthyr's population, the
ironmasters clung to an uncontaminated Anglicanism. They
discountenanced all religious groupings outside of the
Established Church, regardless of their political servility and social quietism. Richard Crawshay was "no Friend to new fanatick Sectarys", as he told the Baptists of 'Capelsion'. The supplication of local Wesleyans received an equally abrupt dismissal.

"Let the Affinity apparently of your Sectary to the Church of England be as twill—a division from it is a Schism that I never can Subscribe to--The Word of God on which all you popular Preachers lay so much stress—is as ably Preach'd in our Church as in your Chappels--And the road to happiness in this Life & that wch is to come explained to us most Comfortably by Men of good Morals and Superior Education—than be expected to rise out of inferior seminary".

Only at Dowlais could Methodism expect a sympathetic hearing. Thomas Guest (works manager 1787-92 and 1798-1807), was a lay preacher, and, in common with several of his senior associates at the works, a trustee of the Wesleyan chapel which was built alongside the Morlais brook in 1796-97. However, the real powers at Dowlais—Taitt and Lewis—viewed all this with undisguised contempt. If Guest was "to Compose & arrange in his Mind Discourses to be deliver'd in Public", then this could only be done, Taitt reasoned, during the Company's time. More seriously, Guest's alleged preference for fellow Methodists would lead to his employing "a Set of Hypocrites who will at all times sacrifice our Interests to their pretended Zeal for Religion". In 1799, relations between Taitt and his brother-in-law were nearly
severed, when Guest was told frankly that "Preaching in dissenting Meetings is shewing a dissatisfaction with the Establishment Conformable to the Laws of the Country". 20

A hostility toward all extra-Establishment congregations, even those marked by doctrinal conservatism and political submissiveness, ensured that politico-religious polarity was an abiding feature of Merthyr society. The ironmasters held to an obdurate Toryism. They were confronted, across a widening divide, by a Dissenting constituency which was increasingly radicalised. Dissent was also being gathered into a more cohesive bloc. It was paradoxical that Merthyr's cocktail of heterodoxy, formed through a process of inflexibly principled sectarian fission, and spawning a succession of radical groups, tended, by the end of the eighteenth century, towards the dissolution of rigid theological demarcations. The fluidity of religious affiliation which overcame the more liberal Dissenting congregations was encapsulated in the career of Rev. Daniel Davies (c.1760-1853), trained at the heterodox Carmarthen College, and ordained at Ynysgau in 1785. His marriage into the Daviseses of Gwernllwyn Isaf gave him privileged access to local Baptist councils. The Rev. Davies was also willing to perform a caretaker ministry for the Cefn Coed Unitarians, untroubled by his formal Arminianism. 21
This was the milieu in which Merthyr Jacobinism was to be grounded - a welter of heresy which, at its boldest and most 'rational', shaded into an underground tradition of scepticism that persisted in the Hills in tandem with more conventional forms of non-Anglican 'belief'. This current was well represented by Rhys Hywel Rhys of Vaynor (c.1744-1817), variously a stonemason, Miller and publican. He was an autodidact mathematician and astronomer, and a pillar of the Cyfarthfa Philosophical Society, whose members, Charles Wilkins recalled, "were only too happy to tread the debatable tracks of religious politics and philosophy; and some even indulged in opinions which led the Cyfarthfa school of philosophers to become unjustly associated with positive Atheism".  

Rhys, who delighted in vehement anti-clerical verse, did not trouble to hide his infidelity. His self-composed epitaph spoke, as one horrified nineteenth-century commentator confessed, "only of the dissolution of the body, without a whisper in it of the Christian hope of a glorious resurrection". Rhys scorned authority in this world as surely as the next, and advertised the fact by sporting a white hat, the badge of Jacobinism. He personified a free-thinking alehouse intelligentsia, deeply embedded in the Merthyr district, which was to be a key component of local radicalism.
While the great expanse of Merthyr's late eighteenth-century social world remains mute and intractable to analysis, the threads of a radicalism are detectable, stretching between the 'advanced' chapels, village alehouses and hillside farmsteads. Its main social coordinates were, typically, related to economic independence, and a modest well-being. The targets of its critique were grasping clergymen, officious state agencies, monopolists, and the gentry landlord class. It flourished most among craftsmen, freeholders, and small farmers: men (more rarely women) with some literacy, and a modicum of power over their working lives.

An inspection of a surviving baptismal register for one of the key Dissenting congregations, Ynysgau, commencing in 1786, permits a speculative identification of the key figures. Occupational or residential details are given for only a fraction of those named in the register. Even so, the social profile of the chapel membership yielded by this irregular sample, confirms the suggestions made above. Artisan trades were strongly represented: masons, carpenters, and smiths, who could slide from the small workshops and yards of Merthyr village to the sprawling ironworks with amphibious ease, were well to the fore. Also present in disproportionate numbers were publicans. James Roberts, the freeholder who opened the Crown in
1786, was a member at Ynysgau; so was Thomas Miles, landlord of the King's Head in the High Street, Rees Rosser of the White Lion, and a host of lesser alehouse keepers.

As the example of James Roberts, the freeholder-publican, suggests, religious and political dissent drew strength from small tenants and the petty land-owning strata. 'Yeoman' farmers in Merthyr were under constant pressure from the stewards of distant, but avaricious, titled landlords. In view of the compulsion to surrender valued use-rights, or submit to escalating rent demands, it was not surprising that several prominent families of Puritan ancestry responded to the radical critique. Often, they prospered on the fringes of the giant ironworks, taking up contracts for haulage or quarrying. Yet they remained equivocal in their welcome to the overbearing ironmasters, and lost few of their old anti-clerical, anti-landlord prejudices.

The Edwardses of Gurnos, the Davises of Garth, and the Morgans of Graig all carried their Dissenting heritage over into political extremism. Edward Edwards of Gurnos was one of those who, at a notorious meeting of Merthyr's vestry in 1815, resolved to send a "Petition to the House of Commons for a Reform in Parliament".26
landowning families helped to sustain an indigenous radicalism. William Morgan of Grawen (c.1746-1814), as near to a landed gentleman as the leached and stony soil of the Brecon Beacons would allow, was a trustee of Ynysgau, well-disposed toward the Unitarians of Cefn Coed, and something of a patron to the free-thinkers of the district. It was he who installed Rhys Hywel Rhys, atheist and scourge of clerics, as the sexton of Vaynor Church. 27

* * *

The inter-connections are not easily read, but they are suggestive of a strong and competent radical bloc. Developments in the 1790s fully confirm this impression. Radical expectations had been aroused by the fiercely-fought county election of 1789, when Thomas Wyndham, heir to the estates of Dunraven and Llanmihangel, was propelled into opposing the aristocratic 'junto' that had hitherto controlled the Glamorgan seat. Radicals in the county seized upon this unforeseen breach in the stuff of aristocratic dominance, producing a rhetoric "remarkably like that of contemporary French dissidents or Dutch 'Patriots'". 28 The upheaval in county politics was eagerly followed at Merthyr. 'Independent' freeholders
met to endorse the rebellion against aristocratic diktat, and to heap abuse on opponents of Wyndham's candidature. 29

However, the flowering of radicalism in the revolutionary era soon overstepped the limits of Thomas Wyndham's anodyne and transient oppositionism. Richard Crawshay was to give Prime Minister Pitt a grave account of Glamorgan politics in April 1793, only two months into the war with France: 30

"The Oppositionists here are as busy as the Devil sowing Sedition, they fill the minds of our Gentry that the War is a Wanton exercise of your power and all the Calamities of Individual and Commercial Credit are the first effects of it".

Yet, as Crawshay knew, there was more at stake than gentry disquiet over the costs of Pitt's counter-revolutionary crusade. The ironmaster was writing from Merthyr, the epicentre of political turmoil, where matters had already exceeded the generalities of anti-ministerial rhetoric in an ominous way. In the autumn of 1792 Crawshay had been disturbed by the "evil Spirit [which] prevails Strongly amongst our Dissenters from the Damnable Doctrines of Dr. Priestley & Payne". Indeed, the 'evil Spirit' was manifested, in October 1792, in a novel and alarming coalescence between Merthyr's longstanding radical commitment and its new world of industry. The union had
been consummated at the site to which both parties naturally gravitated - the alehouse.

The instigator of the movement was identified as Thomas Miles, a member at Ynysgau chapel, and the landlord of the King's Head. Miles had extended this invitation to his proletarian customers:

"this fellow says to our Workmen come spend your Money with me & I will raise all your Wages for you--& to prove he was in earnest he drew up the Enclosed Paper--which is signed by 30 persons who come to my Carpenters & prevail on them to sign & leave Work please to observe the paper tends to raise all Wages By riding among them & promising to Consider their Case with my Brother Ironmasters I got them to their Work And at present all is peace--but Mark a few days after Sam. Homfrays Miners by a deputy inform'd him they wou'd only Work the Month out unless they had an advance of Wages how or were this Mischief will end I don't know".

Tom Miles's manifesto has not survived, but Crawshay's indignant summary still provides an invaluable sketch of local Jacobinism. Some of Crawshay's phrasing does seem extraordinarily apt: his description of Miles as "a pety Foger in the true meaning of the Word", for instance, captures the punctilious and argumentative character of plebeian radicalism with a surprising vividness.

The ironmaster also testifies to a political precocity quite in keeping with Merthyr's industrial modernity.
Merthyr Radicalism

Merthyr's truculent workmen were not aping, in a partial or primitive manner, a pattern determined in more sophisticated centres. They were participants in the "veritable explosion of strike activity" of 1792, coincident with, and annexed to the floodtide of Paineite radicalism. At Merthyr the two were blended, briefly, in an impressive synthesis. Crawshay was struck by the generalisation of the demands: their tendency was for an advance of 'all Wages', and they were addressed to the 'Brother Ironmasters' as a group. Equally, the workmen made no resort to the 'crime of anonymity' - the unsigned threatening letter - which, it has been suggested, was a habitual mode of protest where "forms of collective organised defence are weak, and in which individuals who can be identified as the organizers of protest are liable to immediate victimization".

The Merthyr workmen communicated their grievances with a composure that was, perhaps, more unsettling than a blood-curdling note. Crawshay's carpenters attached their names to a quasi-seditious petition, while the Penydarren miners sent a 'deputy' marching into Homfray's presence to deliver their ultimatum.

The assertiveness of 1792 did not, however, persist. Or at least there is no evidence for it. Silence is not in itself necessarily conclusive, especially in connection
with a movement that was at best semi-legal. But some silences are significant. Five years later, when Crawshay was crowing to John Wilkinson of the defeat of a puddlers' 'revolt' at Penydarren, and of the vanquishing of malcontents at his own works, he made no mention of publican-provocateurs or the wider connotations of industrial unrest. The absence might be explained by the effectiveness of the repression which was directed against plebeian radicalism on a national scale. Crawshay, who dreamt of "punishing this Thos. Miles in the most exemplary Manner in ter.\textsuperscript{m} to others", was undoubtedly eager to chasten local Jacobinism. It is also the case that Merthyr's industrialisation, while providing new scope and impetus to a radical tradition, simultaneously ate away at the marginality of the area which had previously allowed unorthodox ideas to flourish unmolested. By 1800 the town of Merthyr, with its 'turbulent' population and 'fanatick Sectarys', demanded scrutiny and supervision from the authorities as it never had before.

That is not to say that the radical tradition in Merthyr was effaced. So far from that being the case, radical Dissent came to wield uncontested power in the town in the course of the first half of the nineteenth century. In a series of overlapping texts, and in memorable style, Gwyn
A. Williams has pieced together the radical ascendancy and explored its consequences. He has identified the key figures in that process as a grouping of merchants-cum-shopkeepers who aggrandised the town's previously inchoate trading sector in the first years of the nineteenth century. The leading personalities were newcomers, most notably the brothers Christopher, Job, and William James, who had moved up the line of the Glamorgan Canal from Whitchurch, north of Cardiff, and who, once in Merthyr, made links with other men of ability and promise. "This enterprising and dynamic family was the nucleus of a powerful social interest...a cluster of associates, kinsmen, and friends made the James connexion a centre of local political influence". They were lent cohesion by a shared religious heterodoxy. Christopher James was a 'Sosin' - a Socinian (Unitarian) - as were a good number of his allies. Their politics were of a pronounced radical hue.

The James connexion, in conjunction with the then-democrat William Crawshay junior, took Merthyr's parish government into their hands in the late 1820s. With the enfranchisement of Merthyr in 1832, the 'shopocrat' caucus led by the Jameses emerged as the preponderant influence in the new Ten Pound electorate. They exerted an
irresistible pressure on (Sir) Josiah John Guest, the constituency's first M.P., to adapt himself to a radical agenda. Thus was an erstwhile Canningite Tory transformed into an extreme Whig. Williams concludes by noting that—contrary to those post-Reform Tory critics who asserted that Merthyr was nothing more than a pocket borough for Guest—the ironmaster of Dowlais was in fact a prisoner of his 'shopocrat' electors.

However, the 'Jamesian' ascendancy was very much a phenomenon of the post-1815 period, indeed, of the 1820s. And its air of an incipient small-town plutocracy betrayed a sharp difference of tone from the doctrines promulgated by Thomas Miles at the King's Head some thirty years before. The Jameses and their allies in Merthyr's tiny middle-class represented only one shard of the "single democratic tradition of the Jacobin 1790s [which] had splintered under the pulverising hammer of class formation". That splintering had enforced a sorting of political possibilities, in which certain emphases and strategies were developed and others aborted. After the entusiasms of the early 1790s, radical energies were directed into specific channels: it remains to be seen how these were chosen, and how others were spurned.
The icily hostile political climate in the Britain of Pitt and Sidmouth formed the backcloth to the process of political differentiation at Merthyr, but there were also important local circumstances which disrupted the alignment of forces that had appeared so threatening in 1792. Although many of these must remain obscure, it is possible to trace, in at least one of its facets, the disintegration of democratic aspiration in the Merthyr district. The crucial element was a fierce conflict in the late 1790s, between the ironmasters and the lesser parishioners, for control over the funding of poor relief. The outcome of the conflict was seminal in the development of Merthyr's politics. The defeat of the parishioners introduced disarray into the radical camp, while the triumph of the ironmasters marked their ascension to power in Merthyr Tydfil - an ascent of unusual rapidity, which few contemporary industrialists could match.

* * *

Once again, political possibilities were embodied in the person of Thomas Miles, who was, according to the 1795 Directory, both 'victualler & parish clerk'. This dual accreditation has a telling significance, since it establishes a continuity between the Jacobin-inspired strikes of the early 1790s, and the question of parochial
administration, which emerged as an arena of serious political conflict in the mid-1790s. In this, the ironmasters were ranged against the traders, freeholders, and farmers of the parish. Both sides insisted that the other should bear the costs of supporting a growing population of paupers and dependents. A struggle over the levying of poor rates had, in itself, no necessary radical content, but at Merthyr, where so many of the petty ratepayers inclined towards radical politics, the outcome of any contest would have significant effects on the longer term development of local politics.

Poor relief, and the distribution of its burdens, posed severe problems for any parish swollen with a new, industrial population. John Wilkinson, for example, feared for his ironworks at Bradley in Staffordshire, where the "constantly increasing Amount of the Poor Rates...filled him with Apprehensions of final ruin to his Establishment". His solution was characteristically sweeping: in 1788 he petitioned the House of Commons to grant his premises extra-parochial status. If his ironworks was allowed to go unrated, Wilkinson pledged that his workmen would never have to call upon the parish for support. Rather, they would derive an income during sickness from a contributory insurance scheme internal to
Richard Crawshay, like Wilkinson, viewed the demands of the parish officers as an unjustifiable "tax [on] the Capitals employ'd in Manufacture". And he seems to have aired a similar proposal at Merthyr for "fund[s] at each works for the Relief of sick and lame workmen". By 1790, foreseeing the potential for strife at Merthyr, Crawshay was casting about for a suitable test case with which to obtain a definitive legal judgement on the liability of industrial premises to rates. Two years later he found such a case - not at Merthyr, but at Samuel Glover's Abercarne ironworks. He recruited John Wilkinson and Thomas Williams to prosecute a grand campaign, taking in all the metallurgical trades, to secure safeguards for large-scale industry. However, that project never came to fruition. Instead, Crawshay, together with the other Merthyr ironmasters, spent much of the next decade embroiled with the parishioners of Merthyr Tydfil.

Merthyr had only the most primitive administrative apparatus with which to tackle the burgeoning problem of poor relief. The only peculiarity of the old parish was its division into five hamlets, a concession to its gross size. Each of these hamlets - Forrest, Taff and Cynon,
Heolwermwd, Garth, and Gellideg - had its own overseer of the poor. Otherwise, parochial government was headed by two churchwardens, one chosen by the rector, the other elected by the ratepaying parishioners, as were the constables, surveyors of highways, and other parish officers. Until 1822, when a select vestry was instituted, participation in the running of the parish seems to have been open to all ratepayers. As a result, grievances might be aired at the fortnightly vestry meetings without inhibition.

In 1795 the 'proprietors and Occupiers of Land' in the parish summarised their grievances as follows:

"In the parish of Merthyr Tidvill...there have been erected of late years several very considerable Iron Works...In these manufactures there are employed a great number of Manufacturors and Labourers from distant Countries many of whom by servitude and divers other means acquire a Settlement in this parish and from the very frequent accidents happening to them in the manufactures and other infirmities attending them they and their Families become actually Chargeable and are relieved by the parish".

Whatever the toll in 'very frequent accidents' in the ironworks, the parish budget had grown gigantically to meet new demands in the twenty years prior to 1795. Parochial rates had raised only £26 in 1775-76. By 1783-85 receipts still averaged only £41. Thereafter, parish
expenditure soared as though it were yoked to the growth of iron production. Although the rate assessment brought in £1,370 for the year to Easter 1803, outgoings totalled £1,453.45

Naturally, the indigenous parishioners were anxious to shift the burdens of poor relief onto the ironmasters as far as was possible. To prove their earnestness, the parishioners took legal advice over the winter of 1794-95 as to whether the ironmasters could be forced to "contribute towards the relief of the poor of this parish and other parochial Taxes in respect of the clear annual profits accruing from the Iron Works". There were, it was reported back, no legal grounds for this. However, if the parish officers were to initiate a programme of wholesale removals against all those who were unable to produce a certificate of settlement from their native parish, it was likely that the ironmasters would "for the sake of avoiding this inconvenience chuse to indemnify the parish against any burthen that may be brought upon them by their workmen".46

This thinly-veiled threat was enough to edge the ironmasters towards compromise. "I had no opportunity of saying anything to Mr. Crawshay about the Taxing the Iron Works", Taitt told Robert Thompson in November 1794,
"[but] I know not whether in Sound policy we ought to resist it". For their part, the parishioners were not inclined to be punitive. Many of them had put up houses and other improvements which did not feature in the then current rate assessment. In consequence, they were not yet ready to press the issue as far as a general revaluation of property in the parish. Accordingly, the parishioners and ironmasters signed an agreement in September 1795, whereby the latter were to make a 'voluntary' extra contribution to the parish funds of £20 per furnace per annum.

In the frantic atmosphere of the 1790s such an arrangement could not last. Within eighteen months, the parishioners had presented a rate to which the ironmasters would not accede. It opened a period of sharp hostility between the masters and a parish vestry which, under the guidance of Henry Jones (d.1806), village shopkeeper and leading activist in parochial affairs, sought to swing the onus of the rate firmly onto the ironworks. The rate set in the spring of 1797 was 'so enormous' that the ironmasters reacted with a rare show of unanimity. On 1 July 1797 Crawshay, whose Cyfarthfa works had been rated at £5,625, issued notice of appeal against the latest assessment for the hamlet of Gellideg. Two days later, notices of appeal for Heolwerwmd hamlet were submitted from
Penydarren, Plymouth, and Dowlais, identical in every particular. The appellants were victorious. At the midsummer quarter sessions in Neath they had the rates quashed. With one success under their belts, the ironmasters were now encouraged to challenge a revised rate at the Michaelmas sessions. Pointedly, they put two fields in the tenure of Henry Jones at the top of their list of under-rated properties. Again, the rate was disallowed.

The complaisance with which the county bench treated the appeals of the ironmasters can only have spread alarm among the parishioners. So when the ironmasters intimated that a new round of objections would be made to the assessments for Heolwermwd and Gellideg at the impending Epiphany quarter sessions, the parishioners sought an accommodation. The two sides met in an extraordinary vestry meeting on New Year's Day 1798 and agreed to start afresh. However, attempts to negotiate an equitable arrangement proved futile, and the ironmasters resumed their offensive at the Easter sessions for 1798. They beat down yet another rate assessment with carefully prepared listings of alleged omissions and inequalities: Crawshay dealt with Gellideg, the Dowlais Company with both Garth and Forrest, while the brewer Thomas Turley
carried the attack against Heolwermwd. To consolidate the ironmasters' success, Richard Hill was pressed into service as overseer for the hamlet of Heolwermwd, (the most populous in the parish, with 65% of the total population in 1801).

By now the ironmasters scented total victory: when Richard Crawshay rejected the latest rate for Gellideg at the Easter sessions in 1798, he did so even though its valuation of Cyfarthfa at £3,000 was scarcely half the figure settled on the previous year. In June 1798 the ironmasters imposed a new schedule of assessments, fashioned after their own desires. Indeed, they re-shaped the assessments so effectively that they prompted a salvo of objections from the stung parishioners. The rate made out for Heolwermwd by Richard Hill was challenged by Leyshon Williams of Penylan, who disputed the annual valuation of £30 placed on his farm, perched on the mountain top 700 feet above the Plymouth works, while the furnaces at Dowlais, Penydarren, and Plymouth, together with their associated collieries, were entirely omitted from the rate. He was echoed by Phillip Griffiths, the Merthyr attorney who had acted for the parish in previous appeals. In Gellideg, Thomas Williams, the farmer of 'Tyn y Tu mawr Isha', challenged the under-rating of the
Cyfarthfa works and the wholesale omission of the collieries worked or sub-let by Crawshay & George.  

The reception given to these appeals at the 1798 midsummer sessions was decidedly less affable than those afforded to the earlier appeals of the ironmasters. The rates for Heolwermd and Gellideg were confirmed, and costs were awarded against the appellants. To complete the rout, the ironmasters challenged the accounts of former parochial officers. The Dowlais Company harried George Webber of Pentrebach, the landlord of the Plymouth Arms and Richard Hill's predecessor as overseer for Heolwermd, through the courts, and eventually succeeded in having over £215 struck off his accounts. James Birch, a freelance engineer with connections with both Dowlais and Penydarren, performed the same service by pursuing William John of Castle Morlais farm, the erstwhile overseer for Garth.

The conflict over rates in the last years of the eighteenth century subsided with the ironmasters in decisive command. Although some further, desultory attempts to alter the valuation were made under the aegis of Henry Jones in 1800 and 1802, these were firmly rebuffed. Otherwise, for a decade after the humiliations of the late 1790s, the parishioners slumped
into inactivity. The surviving historical records for the first years of the nineteenth century in Merthyr are threadbare and exceptionally difficult to interpret. However, in view of the impact of preceding events it seems justifiable to view the prevalent mood as one of cowed demoralisation.63

Indeed, when the petty property-owning parishioners of Merthyr did resume a noticeably active role in local affairs, they entered a process of self-definition in which they differentiated themselves from the propertyless, not the ironmasters. The formative influences were proletarian lawlessness and the strains engendered by an urban community which seemed ready to implode. The point at which these strains become insupportable was signalled by a concatenation of initiatives at the end of the first decade of the nineteenth century.

In 1808 the vestry voted funds for building a "place of confinement for disorderly people".64 The following year, a Court of Requests was established to facilitate the recovery of small debts, (and proved sufficiently busy to require the services of an additional beadle by the start of 1812).65 The Court of Requests was complemented within weeks by a 'Society for the Protection of Property in the
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Parish of Merthyr Tydfil, briefed to speed the prosecution of felons. Overall, there was a growing consciousness among vestrymen of the requirement for bulwarks of good order in a locality where conventional restraints were flimsy and deteriorating. Thus, in June 1811, a meeting of the vestry agreed on an increased scale of rewards for the parish constables, and pledged to "protect the Constables in Quelling riots and prosecuting Rioters".

The turmoil of Merthyr's nascent urban order was aggravated by a renewed crisis of poor relief. By 1810, as the town's iron economy dipped into depression, rate demands were regularly exceeding the levels which had once pitted parishioners and ironmasters against one another. However, the superiority which the ironmasters had asserted ten years earlier still held. The parishioners colluded with an intensive husbandry of existing resources on the ironmasters' terms, rather than resume the struggle to re-define the basis on which rates were to be harvested.

In May 1812, Joseph Coffin, a Unitarian tanner, was appointed as a salaried General Overseer. He presided over a regime of swingeing retrenchment. A decision to cut the level of out-relief by a fifth was made in July.
1814. In the succeeding months, the vestry deliberated on the wisdom of establishing a lace manufactory to which pauper children might be bound. In January 1815, it was decided that up to forty juveniles were to be lodged with one James Montague at his manufactory, and that parents who refused to surrender their children were to forfeit parochial relief. Overall expenditure on the poor was cut by some 15% between 1813 and 1815, and other items of spending were subjected to the same restraints. The only category of expenditure to show an increase was the money disbursed in legal fees and overseers' expenses for the removal of paupers.

These last years of war with France saw a sea change in the character of social relations at Merthyr. The flurry of vestry activism in the years about 1810 represented one facet of this. The freeholders and farmers of the parish, reinforced (and increasingly eclipsed) by a expanded and wealthier 'Trade' in the town, responded to an industrial community which posed an unprecedented set of problems. Put simply, these stemmed from the infrastructural and institutional vacuum at Merthyr, a vacuum which called into question its viability as an urban settlement. However, the remedies proposed in the vestry - undeviating
parsimony and curbs on 'disorder' - bore the marks of the defeat which the ironmasters had inflicted upon the parishioners in the last years of the eighteenth century. A determination to penalise plebeian contumacy was matched by a reluctance to challenge the hegemony of the ironmasters in parochial affairs.

This moment was of considerable importance in the formation of a distinctive urban and political identity at Merthyr. The revitalisation of vestry affairs coincided with the atrophy of the works-orientated violence that had been so instrumental in aligning the loyalties of ironworkers, colliers, and miners. Indeed, the type of disciplinary initiatives that issued from the vestry signified that it was now inadmissible for the ironmasters to wink at, still less foment, repeated breaches of public order. The riotous clash between workmen from Dowlais and Penydarren on the Pwllwyheud mine patches in November 1809 proved to be the swansong of the phenomenon. Although the rival works were embroiled in yet another dispute within the year, Samuel Homfray was now unusually pacific, urging recourse to a legal settlement of the problem:71

"I think this will be much more becoming than what you are now pursuing, by subjecting poor ignorant workmen to danger in consequence of their being opposed to each other".
In due course, the two Companies moved towards "settling all their differences". Over the winter of 1811-12, two teams of surveyors, attorneys, and mineral agents were appointed to fix definitive boundaries between the two works.

Moreover, after 1810, it was questionable whether the ironmasters could still summon up a crowd of 'their' workmen to serve as foot soldiers in Merthyr's border wars. The seemingly endless expansion of the iron industry, which had provided the impetus behind the struggle to aggrandize resources, gave way to a period of contraction. By the second decade of the nineteenth century, the earlier buoyancy of the iron industry was faltering as the national economy staggered under the impact of the successive blockades and counter-blockades that now attended the war against Napoleon, the embargoes which sealed the United States, and the collapse of the South American market in 1810. At the Merthyr works, retrenchment now became the urgent priority: "the days of pride and profusion are over", it was said at Cyfarthfa in the summer of 1813, "& a tenacious look out on the contrary tack must take place".

The drive to economise, whether through direct cuts in piece rates or through the forced redistribution of
responsibilities within the workplace, inevitably provoked discord. At Dowlais, the ball-furnacemen struck work in April 1810 rather than pay their juvenile assistants out of their own pockets, as the Company now insisted. The dispute came to be remembered, significantly, as the 'first strike' at Dowlais. Of course, strikes were no novelty at Merthyr, but from 1810 disputes became sustained and recurrent. In the harshening economic climate of the early 1810s, stoppages by forgemen began to take on the character of calendar events. (It was more than coincidence that Dowlais and Penydarren sued for peace over the terrible winter of 1811, a time of severe inflation and depressed trade). By the spring of 1813, all the Merthyr works were involved in a strike — or rather, a concerted lockout — of their puddlers. The ironmasters arranged for the issue of notices of a reduction in prices to coincide with the closing of the Glamorgan Canal for repair work. The response was concerted also. The puddlers, apparently of all the works, bound themselves by what William Crawshay termed a 'Luddite Oath', and sent communiques into Staffordshire to pre-empt the recruitment of blacklegs.

The intensification of industrial strife elicted no discernible response from the radicals who now dominated the trade of Merthyr. Their abstention was a striking
retreat from the positions it had been possible to adopt a generation earlier. In 1792, Thomas Miles had promulgated a creed of higher wages for all. His call was not revived in 1813. This reflected the fissures in a democratic ideology that were bound to open up beneath the 'pulverising hammer of class formation'. The Jacobin critique had been populist (rather than class-based). It identified the oppressions which weighed upon the 'people' as being essentially political rather than economic in character. The remedies it prescribed were appropriately political, relating to an equitable system of representation, and the extirpation of corruption in the state. While the radical critique, as it emerged in the early nineteenth century, developed many differing emphases and subtle variants, its continuing focus on political exclusion as the source of popular distress ensured that industrial militancy could be shrugged off as a strategy.\textsuperscript{78}

The radicals' silence in 1813 also reflected the foreclosure of political options brought about by the traumatic events of the late 1790s. In 1813, radical vestrymen submitted to the necessity of increasing the yield of the rates - in partnership with the ironmasters - without audible demur. Indeed, it required a gross provocation on the part of the masters, during the
devastating post-war depression, to dissolve that compact. In the winter of 1816-17, the ironmasters proposed to bring into the rate assessment properties of only £6 per annum in value — that is, the great mass of housing put up by middle-class speculators — and to charge the owners rather than the occupiers. This forced a resumption of the highly charged struggles of two decades earlier, with the parishioners once again seeking to tax the furnace plant. Significantly, the new mood in Merthyr coincided with the reactivation of democratic politics nationally.

There were further difficulties in sustaining a unified radical front. For one, the political ideology espoused by many radicals was antithetical to the mores of plebeian communality. There was never an exact compatibility between the fellowship of the iron trades and the rationalist scepticism to which many of Merthyr's ironworkers and colliers were attracted. An ideology which denounced as bogus the air of mystery with which Burke and other apologists endowed the ancien régime might just as readily evince hostility to the 'superstitions' that surrounded the iron crafts. There was always a contradiction between the independence of action which was extolled in the radical ideal of citizenship, and the collective solidarity which was demanded in the workplace.
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It was a contradiction which could never be fully resolved. The trajectory of a man like Francis Place— from Jacobin artisan to unswervingly orthodox political economist— suggests the impossibility of achieving a consistent solution. At Merthyr, the full import of that contradiction, when allied to class division, became apparent in the 1831 Rising. As the insurgents took control of the town, the prime target of popular anger was Joseph Coffin, the chairman of the hated Court of Requests, and an impeccable democrat.81 To acknowledge this is to point out the objective limitations of the Dissenting, democratic tradition. It is not, however, an admission of the objective 'impossibility' of resistance, for this could surface in a variety of forms. For example, in September 1804 "a person of Turbulent mind and disposition" addressed George Overton, engineer to the Dowlais Company, thus:82

"You and the Iron Masters came into the Country to make your fortunes by imposing on the natives you deserve to be kicked out of the Country and the time is not far distant when you shall be so done by, and I will do everything I can to promote it".

The speaker then turned to a workman, who was in dispute with Overton for wages due to him, saying: "Attack the Iron Masters immediately don't spare them You have nothing to lose they have".
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These were not the words of a Jacobin agitator, raised in the local Dissenting tradition. The speaker was the Rev. John James Jones (c.1762-1827), the Anglican rector of Gelligaer, and a scion of the Vale gentry. His outburst testified to a rage against the 'Iron Devils' which coursed through the Hills, and even infected some of those who, like the Rev. Jones, sat with the ironmasters on the magistrates bench.

The anger of Gelligaer's turbulent priest may be attributable to the fury of a man whose authority over the 'natives' had been eclipsed by the impudent power of Richard Crawshay or Samuel Homfray. Nevertheless, it points to a wider resentment against the impositions of the ironmasters, a resentment which was capable of energising Merthyr's political tradition. Such transfers of energy were to be the source of Merthyr's later working-class identity, quite as much as the town's radical tradition. For that tradition was not set on a course of unilinear 'progress'. It was susceptible to defeats, dogged by its own internal limitations, and, on more than one occasion, depended upon external propulsion to rescue it from an impasse. Indeed, the pre-eminent political development of the late eighteenth century was the rise to local power of the ironmasters, rather than the waxing of local radicalism. The ascendancy of the
ironmasters stemmed from their confrontation with - and triumph over - representatives of Merthyr's radical tradition. The task of Merthyr's radicals in the early nineteenth century was to come to terms with this defeat.
Endnotes to Chapter Ten

The Mutations of Merthyr Radicalism

1 NLW LL/QA/1, Diocesan Visitation, 1763.

2 Jenkins, pp.113, 118.

3 On this theme, G. Williams, 'Earliest Nonconformists in Merthyr Tydfil', Merthyr Historian, I (1976), pp.84-95.


5 For the disintegration of Cwmyglo, see Wilkins, pp.171-7; T. Lewis, Hen Dy Cwrdd Cefn Coed y Cymmer (nd), pp.18-21; DWB, entries for James Davies, Edward Evan and Richard Rees.

6 NLW/LL/QA/1.

7 Wilkins, p.347.

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10 PRO HO 42/61 fo.559, G. Hardinge to Duke of Portland, 14 April 1801.


12 PRO HO 42/61 fo.559, G. Hardinge to Duke of Portland, 14 April 1801. The parish could, it was true, provide some stock tales of pastoral inadequacy. The Reverend Thomas Price (d.1763), for example, could "not serve his Church in welch". His curate could, but he "run'd in debt by drinking and Carousing", and fled the district, (CCL Facsimile Diary of William Thomas, 10 December 1763, 28 August 1762). There is no information as to the ability of Price's successor, the Rev. Gervase Powell (d.1795), to minister in Welsh, but it is sure that he was rarely at Merthyr to preach in any language. Powell preferred to keep house in the more agreeable surroundings of Llanharan, on the edge of the Vale, (NLW LL/QA/14, Diocesan Visitation, 1791).

13 "A striking feature of Merthyr (and much of south Wales) was the relative weakness of the essentially Welsh Calvinistic Methodists. Indeed, the Wesleyans ...offered them a serious challenge. Both, however, were completely overshadowed by Independents and Baptists who built some of the greatest chapels in
Wales, Zoar for the former, Zion for the latter..."

14 NLW LL/PDM 458-69.

15 NLW 2873E, endorsement dated 17 October 1793 on petition from 'Capelsion'.

16 GwRO D2.162 fo.200, RC to Rev. J. Buckley, 21 November 1796.

17 Wilkins, p.325; NLW LL/PDM 460, petition dated 10 December 1799, lists Thomas Guest, Cornelius Guest, and the engineer James Birch among the trustees of the chapel.

18 GRO D/D G 1799 B-W fo.380, W. Taitt to T. Guest, 6 May 1799.


20 GRO D/D G 1799 B-W fo.378, W. Taitt to T. Guest, 29 April 1799.

21 Lewis, *Hen Dy Cwrdd*, p.82.

22 Wilkins, p.357.

23 Morgan, *Vaynor Handbook*, p.82. The epitaph is translated from the Welsh in Wilkins, p.100:

> After the pain and pangs of death
> Will have shattered my earthly tenement,
> Between earth, air, fire, and water,
> I shall separate into minute particles.
"Legendary gossip... is guilty of... falsehood, by saying that Rhys was a 'Jacobin', and wore a white hat", Wilkins, p.116. However, it is Wilkins who is guilty of a curious falsehood by confusing Jacobinism with Jacobitism. Thus: "at no period did Rhys believe in the Divine Right of kings"! For further instances of the 'white hat' tradition see Corfield & Evans, 'John Thelwall in Wales', especially p.234; P.A. Pickering, 'Class without Words: Symbolic Communication in the Chartist Movement', Past & Present, 112 (1986), pp.144-62, especially pp.154-5.

25 PRO RG4/4090/28.

26 MPL Merthyr Vestry Minutebook, 1799-1833, fos.206-07, 3 October 1815.

27 Cambrian, 17 December 1814; Wilkins, p. 118.


29 GloRO D1086/F120, W. Lewis to J. Blagden Hale, 17 February 1790.

30 GwRO D2.162 fo.133, RC to W. Pitt, 30 April 1793.

31 GwRO D2.162 fo.130, RC to G. Hardinge, 16 October 1792. Crawshay also wrote to his friend John Kemys-Tynte of Cefn Mabli concerning 'our late Riot' and enclosed another copy of Miles's paper. Unhappily no trace of it is to be found in the Kemys-Tynte MSS. preserved in the NLW, nor in the Glamorgan R.O.

1717-1800 (1980) selects 1792 as the peak year for industrial disputes in the eighteenth century, (see the itemisation of disputes on pp.154-70). Admittedly, Dobson's statistics provide only the barest indication of the real dimensions of strike activity in the eighteenth century. It is becoming increasingly obvious that his totals would have to be multiplied by an unknown but massive factor to give a true picture. Thompson, Making of the English Working Class, pp.111-21, is the most accessible source for the 'annus mirabilis of Tom Paine'.


34 Williams, 'Radical Merthyr', pp.161-92. Also, idem, 'Merthyr Election of 1835'.

35 Williams, 'Radical Merthyr', p.168.

36 Williams, 'Merthyr Election', p.99.

37 HCJ, XLVII (1788), p.167.

38 J. Priestley, An Account of a Society for Encouraging the Industrious Poor (Birmingham, 1787).

39 GwRO D2.162 fo.74, RC to J. Cockshutt, 10 September 1790.

40 NLW 15334E fo.323, R. Hill to J. Cockshutt, 27 April 1791.

41 GwRO D2.162 fo.74, RC to J. Cockshutt, 10 September 1790.
42 See above, pp.258-60.

43 NLW LL/QA/14, Diocesan Visitation, 1791.

44 GRO MS. 3.628, 'Case about Merthir Poor Rule'.

45 BPP 1803-04 XIII, pp.690-1.

46 GRO MS. 3.628.

47 GRO D/D G 1794 T-W fo.251, W. Taitt to R. Thompson, 16 November 1794.


49 Henry Jones, a mercer who died in 1806 (see Cambrian, 8 March 1806), should not be confused with Henry Jones the draper who was a prominent a 'cousin' to the Jameses in the 1820s (see Williams, 'Radical Merthyr', p.168), although that does not rule out a family connection.

50 GRO Q/SR 1797 C fo.49, appeal against the rate assessment for Gellideg, 1 July 1797. GRO D/D G 1797 C-W fo.313, W. Taitt to R. Thompson, 30 April 1797.

51 GRO Q/SR 1797 C fos.46-48, appeals against the rate assessment for Heolwermwd, 3 July 1797.

52 GRO QSM 12 fos.23, 24, 26.

53 GRO Q/SR 1797 D fo.68, appeal against the rate assessment for Heolwermwd, 26 September 1797. GRO QSM 12 fos.37, 39, 41.
54 GRO QSM 12 fo.54. And see GRO D/D G 1798 A-W fo.78, W. Taitt to R. Thompson, 4 January 1798: "I do not perfectly comprehend the agreement with the Parishioners, but Mr. Homfray informs me that we are to pay 20/- for each furnace i.e. £3 for our whole proportion of the Rate (exclusive of farms &c) if it be so pay it immediately, but if it be not so, do not pay any thing for farms or any thing else".

55 See variously GRO Q/SR 1798 B fo.35, appeal against the rate assessment for Gellideg, 9 April 1798; fo.36, appeal against the rate for Garth, 4 April 1798; fo.37, appeal against the rate for Forrest, 4 April 1798; and fo.38, appeal against the rate for Heolwermdw, 4 April 1798.

56 GRO Q/SR 1798 C fo.37, appeal against the rate assessment for Heolwermdw, 30 June 1798.

57 GRO Q/SR 1798 C fo.38, appeal against the rate assessment for Heolwermdw, 30 June 1798.

58 GRO Q/SR 1798 C fo.39, appeal against the rate assessment for Gellideg, 30 June 1798.

59 GRO QSM 12 fos.71, 73, 74.

60 GRO QSM 12 fos.83, 96.

61 GRO QSM 12 fo.88.

What, for example, is to be made of the dispute over tithes between Rev. George M. Maber and four parishioners in 1802-03? Four farmers of known Dissenting affiliations were summoned to appear before the Consistory Court at Llandaff for withholding tithes due to Maber for the period November 1802 - June 1803. See NLW LL/CC/C (G) 1793 for the citation of Edward Edwards of Gurnos, Leyshon Williams of Penylan, Richard Jenkins of Aberfan, and John Morgan of Graig. The Morgans of Craig were worshippers at Ynysgau, so were the Edwardses of Gurnos. Edward Edwards was to re-emerge in 1815 as a partisan of parliamentary reform, as was Richard Jenkins, the Unitarian farmer of Aberfan. Leyshon Williams of Penylan had already distinguished himself as a combatant of the ironmasters in the battle over the poor rates. Should the case be seen as evidence of continuing resistance, albeit in a different mode and at a lower key? Or was the Anglican cleric taking advantage of the disarray in radical ranks inflicted by the ironmasters, to press home his own claims?

MPL Merthyr Vestry Minutes, 1799-1833, fo.118, 8 & 21 July 1808.

Cambrian, 30 September 1809, 25 January 1812.

Cambrian, 11 November 1809.

MPL Merthyr Vestry Minutes, 1799-1833, fos.154-5, 22 June 1811.

MPL Merthyr Vestry Minutes, 1799-1833, fos.170-3, 1 May 1812.
Merthyr Radicalism

69 MPL Merthyr Vestry Minutes, 1799-1833, fos.195, 197-8, 22 July 1814, 1 October 1814, 10 January 1815.

70 BPP 1818 XIX, pp.616-17. A sense of the context of these developments can be had from G. Taylor, The Problem of Poverty, 1660-1834 (1969), and J.D. Marshall, The Old Poor Law, 1795-1834 (2nd edn., 1985).

71 GRO D/D G Section B, Box 8, S. Homfray to Dowlais Company, 19 November 1811.


73 Ashton, Iron and Steel, pp.128-61 gives details of the wartime fluctuations in prosperity.

74 NLW Cyfarthfa MSS. vol. 1, W. Crawshay to W. Crawshay jr., 21 August 1813.


78 See the summary in Stedman Jones, 'Rethinking Chartism', pp.102-3. John Thelwall, who (in the judgement of E.P. Thompson) "took Jacobinism to the
borders of Socialism", (Making of the English Working Class, p.175), added a strongly 'economic' edge to his thought. Nevertheless, even this inventive figure remained within the confines of the received tradition. See G. Gallop, 'Ideology and the English Jacobins: The Case of John Thelwall', Enlightenment and Dissent, 5 (1986), pp.3-20, especially pp.9-12.

79 Williams, 'Radical Merthyr', p.165; The controversy can be followed in the following sources: MPL Merthyr Vestry Minutes, 1799-1833, fos.218-20, 228, 230, 232-3, 234, 20 December 1816, 7 January 1817, 30 October 1817, 2 December 1817, 12 January 1818, 24 March 1818; GRO D/D G 1817 (3) G fos.442, 446, 450-1, J.J. Guest to J. Wise, 30 October 1817, 10 & 24 November 1817; 1817 (2) H fo.83, R. Hill to J.J. Guest, 5 January 1817; 1817 (2) H-L fo.289, T. Jones to ?, 11 November 1817.

80 J. Rule, 'The Property of Skill in the Period of Manufacture', in Joyce ed. Historical Meanings of Work, pp.110-11. Benjamin Franklin's famous 'excommunication' by his fellow workmen in a London printing house was one expression of this incompatibility: see B. Franklin, The Autobiography and Other Writings (Harmondsworth, 1986), pp.50-1. In France the contradiction was made explicit in the Le Chapelier law of 1791 which outlawed workers' associations as contrary to the enjoyment of individual right.

81 Williams, Merthyr Rising, pp.122-3.

82 GRO Q/SI 5/1001, indictment of J.J. Jones.
Chapter Eleven

Early Industrial Merthyr in Perspective

With the coming of international peace in 1814-15, the formative period in Merthyr’s development came to an end. The preceding quarter-century had been a time of barely interrupted prosperity for the local iron industry. Beginning with the eclipse and fall of the early 1790s, the expansionist thrust of Merthyr iron was sustained throughout the war years, overriding the vicissitudes of trade which afflicted other sectors. The Merthyr works would know other periods of rapid growth, but in future there were to be interspersed with phases of sharp contraction.

If the uniquely buoyant circumstances obtaining in the era of revolutionary war bore strongly on the formation of Merthyr’s character as an industrial settlement, the sheer concentration of industry was a further, powerful influence. The co-existence of four major ironworks on the perimeter of Merthyr village was enough, on the basis of population size alone, to give the nascent town a dimension which was lacking at the smaller, starker iron settlements at the head of the Monmouthshire valleys, a few miles to the east. For all its inadequacies, Merthyr was truly a ‘metropolis of ironmasters’, quite distinct.
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from the communities attached to the lone ironworks on exposed mountainsides at Sirhowy, Nantyglo or Blaenavon.

The internecine rivalries which arose from the abrasive concentration of ironmaking were also of enduring importance. The conflicts which raged between Dowlais and Penydarren, Cyfarthfa and Plymouth assumed a seminal significance because they were precipitated and perpetuated by commonplace modes of working. These working practices became inseparably interwoven with belligerent confrontations which were acted out on scouring-fields and mining patches. The tensions generated in these clashes were central to the process whereby labouring men and women were gathered into workforces aligned with their employers. In this way, work reinforced authority.

The phenomenon of works-loyalties, originating in the day-to-day conduct of work, proved a decisive factor in the shaping of early industrial Merthyr. It was not, however, the sole factor. There were other, countervailing, tendencies at play. Chief amongst these was a pervading sense of the communal solidarities which enveloped the eighteenth-century iron trades. The Merthyr works, for all their novelty, drew upon the experience, and the
customary practices, of the older iron districts of western Britain. Forgemen and furnacemen, on whose capabilities the Merthyr iron industry depended, exercised a craft inheritance which had descended to them from forbears in Shropshire, Furness, and Staffordshire.

The completion of work tasks was entrusted to these authoritative master workmen, (despite the existence of a managerial tradition of some longevity in the iron trade). They recruited and organised their own work teams, and within these small groupings, hallowed usages, concerning good fellowship and deference to senior workmen, were inculcated. And, since the immediate supervision of work long continued to be farmed out among master puddlers, furnace keepers, rollers, and the like, the observance of established forms of solidary behaviour could be preserved relatively intact.

For the individual workman, therefore, the work gang provided a recognised framework for the conduct of labour, and a relatively stable source of identity amid the flux of a rapidly growing iron industry. Also, the communality of the gang lent its members moral sustenance when they ventured into dispute with an ironmaster. In the end, they could always resort to a mute, collective resistance,
as the Dowlais puddlers demonstrated in June 1816. They used the tactic which had been so characteristic of eighteenth-century trade union struggle, that of simultaneously leaving-off work:

"the whole of the Puddlers were paid off last night without an exception--Mr. Peirce tells me their behaviour was peaceable & completely orderly, & that upon his putting the question to them individually, why will you not continue to Work? they invariably answered--because so & so does not, or because all the others have declared they will not; & that they should learn what was determined upon at Cyfarthfa; and it is singular that not a Man asked for his discharge nor inquired what would be the reduction in the price of their labour".

Obdurate silence represented one aspect of the collective loyalties which suffused the iron industry. Yet there were other facets of workplace culture from which the ironmasters were not excluded, indeed, in which they figured strongly. There were, for example, those gestures which expressed the mutuality of masters and men in the trade, such as the provision made by Edward Kendall, the ironmaster of Beaufort, for his body to be interred by six of his workmen. Similarly, the prosperity of the industry and the liberality of an ironmaster might be greeted with demonstrative expressions of satisfaction: in December 1817 there was "a continual cannonading to be heard from Cyfarthfa[,] report says in consequence of Mr. Crawshays having advanced the wages to the Pudlers from
7/6 to 9/- p. Ton and every other branch of the Wks. in the like proportion. ¹³

Yet the authority of the ironmasters was by no means unconditionally accepted as a benign, all-engulfing presence. There were occasions when workers saw it as intrusive, and resented its operation. During the subsistence crisis of 1799-1801, it was in large measure the perceived over-extension of the ironmasters' authority, encroaching on sensitive issues of consumption, which was rebuked in the riot of September 1800.

Indeed, it is significant how far the boasted mutuality of the trade was actually confined to the workplace. The initiatives undertaken in the 1790s for feeding Merthyr's workmen and -women were forced on the ironmasters, without whose intervention, the physical survival of any sort of community at Merthyr was in doubt. Yet those initiatives were not developed into a broadly-based paternalist project, and only Dowlais persevered with works shops. In the first years of the nineteenth century, new commercial forces from outside the district rushed to cater to the subsistence needs of the town's working population, and, as the sense of emergency eased, so the other ironmasters withdrew.
Conclusion

There was, throughout the period under survey in this study, a tension between the self-sufficient communality of the work gang and the patronage offered by the ironmaster. In fact, one of the central features of these years of helter-skelter development was the exploration, by both masters and men, of the ambivalence of a 'trade' culture to which both parties subscribed. The integrity of that culture was always threatened by industrial conflict, and after 1810 the plausibility of its all-embracing mutuality declined sharply as industrial strife became endemic. Thereafter, its meaning took on different coloration according to altered industrial and urban contexts: by the 1830s, the communality of the work-gang, which had been the vehicle of craft pride, sustained trade union lodges with equal facility. By the mid-nineteenth century, the old mutuality of the trade had ceased to play a key role in setting the tone of Merthyr's social world, and the iron companies were openly casting about for a new type of hegemonic authority. 4

Yet in the late eighteenth century, the frequency with which the Merthyr ironmasters appealed to the corporate pride of their fellows indicates how strongly they felt their own sense of intra-trade solidarity. In this, they reflected the status of the town's iron industry as the off-shoot of an older English iron trade. It is essential
to recognise the close ties between the Merthyr ironmasters and their English counterparts, resting on the historic linkages between South Wales and the trade in Shropshire and Cumbria. These connections ensured that the Merthyr men were, from the outset, implicated in the corporate politics of iron. (This was not true of their Scottish contemporaries, one of whom, in 1787, envied "the Advantage to the English Iron masters from Their general Quarterly Meetings where they not only regulate the prices of their goods but also make Laws or rules for the General governance of Their Society").

In short, it is just as important to view the Merthyr ironmasters in a national frame, as to investigate their parochial setting. Although the economic history of the British iron industry has been widely researched, an adequate history of the over-arching 'national frame' of the iron lobby, in its social and cultural aspects, has yet to be written. Yet, it is abundantly clear, from the partial evidence presented in this study, that the Crawshays, Guests, and Homfrays have to be viewed as members of a self-conscious and assertive community of industrialists. Likewise, Merthyr's workmen and -women require evaluation in the context of a Severn-side, if not a national iron industry. Their notions of how work was to be properly conducted, and of how authority was
legitimately constituted within the ironworks, were not decided upon arbitrarily in Merthyr; they were founded on standards that had been developed in older iron-producing centres.

In this respect, the dearth of hard evidence respecting migration patterns to - and from - Merthyr in the late eighteenth century must again be regretted. The notion that Merthyr was a 'Welsh' town, linguistically and culturally, which was upheld by all contemporary observers who offered an opinion, was undoubtedly an accurate reflection of the numerical dominance of Welsh immigrants. However, this is to overlook the disproportionate social and cultural impact of men - both Welsh and English - who had worked up and down the Severn Valley, along the sweep of coal and iron which stretched from Denbighshire, through Shropshire, past the Stour valley, and took in the metallurgical industries of the Bristol region. It was through this institutional scaffolding, which gave shape to the national iron trade, that furnacemen and forgemen, colliers and enginemen, were guided to:

"....Taff's remoter vale,
Late, by the magic of Vulcanian art,
Grown populous..."
To stress, in this way, the industrial context into which the Merthyr iron industry emerged, is not to lessen the impact of 'Vulcanian art' on the upper Taff valley. The history of Merthyr remains one of superlatives, but, in the years about 1800, the consequences of the town's headlong industrial growth were complex and equivocal. The conduct of work had contradictory effects. Authority was both subverted and bolstered. The growth of the giant ironworks promoted both class alienation and community. The advent of iron threatened to cow, as much as embolden, Merthyr's Dissenting caucus. In this sense, the mythic status of Merthyr in the history of the Welsh working class appears all the more impressive, for the problems with which the inhabitants of Wales's first industrial town were confronted knew of no easy solutions.
1 GRO D/D G 1816 (3) S-W fo.364, J. Wise to J.J. Guest, 30 June 1816.

2 GwRO D.397.1668, copy will of Edward Kendall, dated 16 December 1793.


4 See the revealing speech by William Menelaus, manager of the Dowlais Company, 'President's Address', *Transactions of the South Wales Institute of Engineers*, I (1857), pp.1-8.


Appendix: Indications of Output
in the Merthyr Ironworks, 1798-1813

In 1798 a mere 12,500 tons of iron were cast in South Wales. By 1799 production had topped 25,000 tons, and by 1805 the total exceeded 75,000 tons. Additional data suggest that by 1812 pig iron production had climbed to over 89,000 tons, and by 1817, as the industry recovered from the slump of 1815-16, to over 93,000 tons. These aggregate figures provide the clearest possible evidence of the phenomenal growth of the South Wales iron industry.

The Merthyr data that are available fully confirm the spectacular pattern of expansion. Atkinson and Saber, working from surviving furnace accounts, have calculated a rise in pig iron production at Plymouth from just over 1,000 tons in 1787 to nearly 9,000 tons in 1813. However, these are among the few precise data at hand for production at Merthyr. Consequently it is impossible to establish definitively the extent to which the development of Merthyr corresponded to the trajectory of the industry across the whole of South Wales. It is difficult even to assess the varying pace of growth amongst the few Merthyr works.
Appendix: Indications of Output

in the Merthyr Ironworks, 1788-1815

In 1788 a mere 12,500 tons of iron were cast in South Wales. By 1796 production had topped 34,000 tons, and by 1805 the total exceeded 73,000 tons.\textsuperscript{1} Additional data suggest that by 1812 pig iron production had climbed to over 89,000 tons, and by 1817, as the industry recovered from the slump of 1815-16, to over 93,000 tons.\textsuperscript{2} These aggregate figures provide the clearest possible evidence of the phenomenal growth of the South Wales iron industry.

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In confronting this last problem one broad indicator can be used - a chronology of the construction of new furnace plant. The timing of the introduction of new blast furnaces can be used to denote the relative strength of the rival works and their differential rates of expansion. But this cannot be done without considerable caution, for there is some difficulty in determining when significant expansion had been achieved.

The proprietors of the Dowlais Company had the erection of a new furnace in contemplation as early as 1789, to bring their total to three. A definite decision to build the furnace was made in 1792, and an abortive start was made in 1793. However, substantial work on the foundations did not begin until September 1795. In October 1795 Harry James and Thomas Edward engaged to build the stack, casthouse and bridgehouse. They were employ at least eight other masons in addition to themselves, and a 'sufficient' number of labourers. Four months were allowed for the completion of the job. However, work on the stack only commenced in the the spring of 1796, continuing through the summer. Subsequent construction work stretched through the following autumn and winter, and No.3 furnace does not seem to have been put into blast before March 1797.
When does a new furnace become a furnace? In this instance eight years separate the initial, tentative investment decision and the eventual tapping of pig iron from Dowlais No.3. The sequence of events can be followed closely in the fairly detailed archive of the Dowlais Company, but in the comparatively scant records of the neighbouring ironworks references do not always distinguish between a furnace that is planned, one that has been built but not yet put into blast, and a furnace that is performing its productive function. Bearing in mind the possibility of such discrepancies, the pattern of furnace construction at Merthyr was as follows.

The original Plymouth furnace was erected in the mid-1760s. From the records of litigation between Richard Hill and the Glamorgan Canal Navigation, it appears that the Plymouth works still comprised a single furnace in 1790. A second was built in the late 1790s (post-1797), and a third was under construction as counsel for the contending parties prepared their submissions in the summer of 1801. Four furnaces were in operation at Plymouth in 1811, when the artist J.G. Wood visited Merthyr.

The Penydarren works was founded in 1785 with one furnace. The decision to build a second furnace was taken at the
annual meeting of the partnership in 1792. Gilbert Gilpin spoke of two furnaces being in blast at Penydarren in 1797, but when the Swedish engineer Eric Svedenstierna inspected the works in 1802 he found three furnaces. The Penydarren Company did not add to this total until after the close of the French wars.

Dowlais, the oldest works in the parish, had a furnace in blast from 1760. A second was added in 1789. The third came into blast in 1797. A fourth furnace was erected in the first years of the nineteenth century, being definitely in blast by 1807. A fifth was added after 1812, and in the summer of 1817 two more furnaces were under construction.

The first furnace at Cyfarthfa was built in 1766-67. It remained solitary for over twenty years, until Richard Crawshay put in a second in 1788. Thereafter expansion was rapid. A third furnace was put into blast in January 1796, and a fourth was ready by July 1797. By 1804, at the latest, work was underway on two additional furnaces for Crawshay at Ynysfach, half a mile to the south of the original Cyfarthfa site.
Appendix

In sum, the number of blast furnaces standing in the parish of Merthyr grew fourfold in the quarter-century from 1785 to 1811, from four to seventeen. But to trace out the number of structures which were capable of smelting iron is not an infallible guide to the course of pig iron production. Establishing the existence of a furnace is not to establish that it was continually in blast. In March 1812, 10 out of the 58 furnaces in South Wales were out of blast. Five years later the proportion was 17 out of 62.21 Furnaces might be taken out of blast for a number of reasons. The summer droughts, which deprived a works of water power, were a perennial cause of stoppage. Repairs to its firebrick lining or the replacement of its hearthstone could equally necessitate a furnace being blown out. Of course, shrinking sales could force the blowing out of furnaces, and, if the powerful Merthyr ironmasters were less vulnerable to collapsing prices than some of their rivals in the English Midlands, the market situation could still exercise restraint. A furnace that had been stopped through technical difficulties was unlikely to be blown in again if orders were sluggish.

Again, it cannot be assumed that because a furnace was in blast it was being driven to the utmost of its capacity. The volume of the charge introduced into a furnace - its
'burden' – might readily be altered, as might the strength of the blast. A memorandum detailing notional production costs at the Boyd River furnace in Gloucestershire c.1780 posits output levels graded from 12 tons to a maximum of 21 tons per week. This, in turn, presumes that output could be varied absolutely at will, which was very far from the case. All the available evidence points to the unpredictable behaviour of blast furnaces, and the numerous obstacles to a smooth and consistent production run. This is reflected in those few sets of production figures extant. The following schedule, for instance, lays out the levels of output achieved by the four Dowlais furnaces in one week in November 1816, and reveals very considerable variation, (weights in tons, hundredweights, and quarters):

<table>
<thead>
<tr>
<th>No</th>
<th>Output (ton, Hundredweight, Quarters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>63.13.1</td>
</tr>
<tr>
<td>2</td>
<td>44.11.0</td>
</tr>
<tr>
<td>3</td>
<td>55.16.1</td>
</tr>
<tr>
<td>4</td>
<td>70.3.0</td>
</tr>
</tbody>
</table>

234.3.2.


Another example, this time from Cyfarthfa, tells the same tale – indeed, more so, since Cyfarthfa No.3 was out of

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blast. (Weights in tons, hundredweights, quarters, and pounds):

Iron made at Cyfarthfa Furnaces week ending 17th Jan 1813.

<table>
<thead>
<tr>
<th>Tons</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 61. 5. 3. 8.</td>
<td></td>
</tr>
<tr>
<td>2. 52.17. &quot; .23.</td>
<td></td>
</tr>
<tr>
<td>4. 45.16. 1. 0.</td>
<td></td>
</tr>
<tr>
<td>Ynysfach 1. 62. 4. &quot; &quot;</td>
<td></td>
</tr>
<tr>
<td>2. 70. 6. 2.</td>
<td></td>
</tr>
<tr>
<td>292. 9. 3. 1.</td>
<td></td>
</tr>
</tbody>
</table>

Source: NLW Cyfarthfa MSS., volume 1, W. Crawshay to B. Hall, 30 January 1813.

Variations of this magnitude warn of the dangers inherent in attempting to compute aggregate production totals through the process of multiplying a notional weekly output per furnace. Without consistent access to the detailed furnace books kept by the stocktakers, and now for the most part lost, such statistics must be recognised as subject to a wide margin of error.

The mere enumeration of furnaces is seriously inadequate in other ways: static totals can mask other improvements in the productive capacity of the Merthyr ironworks. A furnace might be completely rebuilt, according to a new model of superior design and capacity. Richard Crawshay
told of this factor in May 1796, in a letter to his son William: "We are very throng in Mortar & Stone and dust one furnace pulling done, and with her Stone building another, and our Machinery getting fast forward..." Thus, Crawshay ended the year has he had begun it - the proprietor of three blast furnaces at Cyfarthfa - but the furnace capacity at his disposal had unquestionably increased. Indeed, the signs are that growth in output may have been attributable as much to surging productivity per furnace as to the increasing absolute number of furnaces. In 1786, a weekly make of 21 tons was regarded as satisfactory at the one furnace then at Cyfarthfa. By 1791, Crawshay aimed for 35 tons per week from each of his two furnaces, and boasted yields of 50 tons per week per furnace five years later. At Dowlais, output per furnace was languishing at around 30 tons per week in the early 1790s, but by 1799 the Company was ready to hoist the threshold at which 'guinea' bonuses were awarded to furnacemen for exceeding production targets from 40 to 60 tons per week.

This formidable expansion was more than sufficient to position Merthyr as the pre-eminent regional, if not national, centre for the production of iron. According to figures supplied by Gilbert Gilpin, the Merthyr works accounted for 34.5% of all the pig iron cast in South
Wales in 1812. By 1817, their proportion had risen to 42.3%, reflecting both an increase in absolute terms at the Merthyr works, and the amount of unutilised capacity at other Welsh works in the fraught postwar years.

This is to consider matters solely at the furnace. Once the manufacture of bar iron is brought into view the crushing dominance of Merthyr becomes still more apparent. Cyfarthfa, Penydarren, Dowlais and Plymouth were responsible for 73% of all the bar iron rolled in South Wales in 1812. Moreover, it is by considering forge capacity that the distinctions between the four Merthyr are to be found, for their relative prowess is to be judged not by their production of pig iron, but by their consumption of pig in the making of bar iron.

The adoption of Cort's puddling process by Richard Crawshay, closely followed by Samuel Homfray, was crucial in establishing a hierarchy of works in the Merthyr district. To supply his new forge and mill, Crawshay required supplies of pig iron from nearby works, as well as the produce of his own furnaces. "I am a pretty Considerable Ironmaster", Crawshay announced in 1791, "and with two Furnaces of my own & 2 of my Neighbours whose whole product I take we produce jointly 140 Tons of Pigs weekly and my forges and Mill are able to make 100 Tons a
Crawshay elaborated in a letter to John Wilkinson in 1796: "We are now making 150 Tons pigs weekly at 3 Furnaces Which with 2 others at Dowlais & Plymouth 2000 Tons each I must work to Consume it". Carriers were also taking Plymouth and Dowlais pig to Penydarren at various points in the 1790s. The extension of bar iron production at Merthyr proceeded with such speed that materials were drawn from far afield. Gilbert Gilpin mentioned the Sirhowy ironworks in Monmouthshire as a supplier of pig to Cyfarthfa and Penydarren in the late 1790s, and when the Dowlais Company opened its new forge in 1801 its proprietors also looked to the east, to the Union works at Rhymney and to the Clydach works in 1803, and to the Beaufort works at Ebbw Vale in 1806.

The growth in bar iron production was awesome. When, in 1785, Crawshay announced his intention to make 5,000 tons of bar iron annually, his project must have appeared utopian. It is not known how much bar iron was actually produced at Merthyr in the mid-1780s, but to have refined 5,000 tons would surely have exceeded the resources of all the South Wales ironmasters combined.

If 12,500 tons is taken as an acceptable figure for the regional make of pig iron in 1788, a maximum possible make of bar iron can be calculated for South Wales, provided an
accurate conversion ratio is available. A calculation made by some south Yorkshire ironmasters in 1806 alleged that 33 cwt of pig iron was needed to make one ton of bar – a weight loss of 39.4% in the refining process. However, since these ironmasters were petitioning against a proposed tax on pig iron, they had every reason to exaggerate the loss of iron. Ten years earlier, after viewing a variety of forge techniques in Shropshire, Joshua Gilpin, the American merchant-industrialist, gave a far lower estimate of the wastage: "It is computed that 30 Cwt of good Pigs yield 23 to 24 Cwt Barrs". Gilpin's formula, then, places the loss at between 20% and 24%.

On the basis of these ratios, the quantity of bar which could have been refined from 12,500 tons of pig iron ranged from 7,575 tons (according to the south Yorkshire estimate) to 10,000 tons (according to Joshua Gilpin). Most modern commentators have split the difference and assumed a standard wastage of 33%, giving a maximum make of 8,330 tons of bar in 1788. And this is an absolute maximum, depending on the unrealistic supposition that every ounce of pig was converted into bar iron. In fact, plenty of pig iron would have been used up in the making of castings. More importantly, some works, such as Dowlais, had only limited forge facilities in the 1780s,
and concentrated on shipping raw pig to foundries and iron merchants in Bristol, Dublin, and London.

In short, Crawshay's declared aim of making 5,000 tons of bar at Cyfarthfa was tantamount to equalling the entire regional output as it stood in the mid-1780s. Yet by the mid-1790s he had surpassed his target. Indeed, he was soon revising it upwards. William Lewis of Pentyrch found him in ebullient mood in April 1792: "He is in high feather, and is determined not to be easy, till he sends down 10,000 tons of bar iron a year". By 1796 Crawshay was under a firm contract to deliver 5,000 tons of bar, under a penalty of £5,000 for non-completion. His actual output in that year was expected to be nearer 7,000 tons, and at Penydarren a make of 3,000 tons of bar was anticipated. A year later, in 1797, Crawshay believed an output of 10,000 tons to be within his grasp: Cyfarthfa was "now perfectly Competant to make 10,000 Tons of Barr Annually & if we had a peace wou'd Certainly make that Quantity or more next year".

The evidence for the 1790s is not precise, but it is unequivocal. In the first years of the nineteenth century the pace of growth is less clear, despite the confidently rounded statistics provided by some visitors to Merthyr. As the following table reveals, the estimates of
production that were collected by canal company clerks, informed insiders, and interested visitors were by no means consistent with each other.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cyfarthfa</th>
<th>Penydarren</th>
<th>Dowlais</th>
<th>Plymouth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1806a</td>
<td>9,906</td>
<td>6,963</td>
<td>5,432</td>
<td>3,952</td>
</tr>
<tr>
<td>1811b</td>
<td>11,000</td>
<td>7,000</td>
<td>5,000</td>
<td>4,000</td>
</tr>
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</tr>
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</table>

Sources:

a  B.H. Malkin, The Scenery, Antiquities and Biography of South Wales (2nd edn., 1807), I, pp.266-7. Malkin derived these statistics from the accounts of the Glamorgan Canal Navigation, for iron freighted between October 1805 and October 1806. They refer to all categories of iron, not just bar.


c  GRO D/D G 1817 (3) G fo.366, G. Gilpin to W. Wood, 23 September 1817. The figures have been...
calculated from an account of rolling mill capacity in March 1812, made out for Gilpin by Joseph Harrison of the Blaenavon ironworks. The weekly totals have been multiplied by a factor of fifty to give an annual sum. A working year of fifty weeks has been preferred on the grounds that the rolling mills were less liable to seasonal interruption than blast furnaces.

The totals for 1817-20 refer to the tonnage of iron carried down the Glamorgan Canal, as cited by Harry Scrivenor in his A Comprehensive History, p.123. As was the case for Malkin's figures, noted above, they include all forms of iron, not just bar, although bar would have formed the great bulk of the metal freighted from Merthyr. Also, the figure for Cyfarthfa includes iron brought down from the Crawshays' Hirwaun works in the neighbouring Cynon valley.

The picture for the first fifteen years of the nineteenth century is, then, far from clear. In particular, the period between 1806 and the immediate postwar years
remains obscure: the data provided by Wood (1811) and Gilpin (1812 and 1817) does not tally with the other sets of statistics. In view of important social and political developments at Merthyr which were clustered in the late 1800s and early 1810s, this is a damaging inadequacy. Still, assuming that the registration of freight on the Glamorgan Canal was consistent, and that Malkin accurately transcribed the figures for 1805-06, some impression of the growth of output can be had from the recorded movement of iron down the canal.

In brief, Cyfarthfa retained its pre-eminence, keeping a marked advantage over its nearest rivals. Dowlais appears to have enjoyed a signal expansion in the first decade of the century, after the installation of new forge facilities in 1801-02. The data for the early 1810s are contradictory, but the works was clearly a participant in the recovery of the trade in the later part of that decade. Strong progress was also evident at Plymouth in the early 1800s, although reaching a plateau in the late 1810s. The most striking fact is the stagnation at Penydarren, an indication, perhaps, that the large capital resources which had given the company so powerful an initial impetus could no longer compensate for the inferior mineral estate it commanded vis-a-vis its Merthyr rivals.
Endnotes to Appendix


2. GRO D/D G 1817 (3) G fo.366, G. Gilpin to W. Wood, 23 September 1817. The weekly totals provided by Gilpin have been multiplied by a factor of forty—forty weeks being the supposed period for which a furnace would be in blast over the course of a year—to give an annual figure. But see below for the dangers in such a calculation.


4. GloRO D1086/F119, W. Lewis to J. Blagden Hale, 7 November 1789.


7. PRO C 13/2394/Hill vs Glamorgan Canal Navigation.

8. GRO D/D G 1797 C-W fo.225, R. Hill to R. Thompson, 24 October 1797.

Appendix

10 GRO Pe 3 (d), 'First suggestions for formation of a Case on S.H.s conduct'.


12 Svedenstierna, Tour, p.54.

13 GRO D/D G copyletters 1782-94 fo.294, W. Taitt to J. Lukin, 1 June 1789.

14 GRO D/D G 1797 C-W fo.288, W. Taitt to R. Thompson, 7 March 1797.


17 GwRO D2.162 fos.9 & 24, RC to J. Cockshutt, 17 March & 20 August 1788.

18 GwRO D2.162 fo.192, RC to J. Wilkinson, 11 April 1796.

19 SRO 1781/6/25, G. Gilpin to W. Wilkinson, 19 July 1797.

20 Malkin, Scenery, Antiquities and Biography, p.176.


22 PRO C 108/135. This furnace was operated in the late 1770s by a partnership comprising Isaac Wilkinson,
Appendix

Thomas Guest of Dowlais, and Thomas Whitehouse, a Bristol ironmonger.

23 GwRO D2.162 fo.196, RC to W. Crawshay, 5 May 1796.

24 NLW 15334E fo.78, R. Hill to W. Bacon, 16 October 1786.

25 GwRO D2.162 fo.93, RC to 'Baron Demodoft', 3 March 1791.

26 GwRO D2.162 fo.202, RC to J. Wilkinson, 21 November 1796.


30 GwRO D2.162 fo.201, RC to J. Wilkinson, 21 November 1796.

31 SRO 1781/6/22, G. Gilpin to W. Wilkinson, 24 October 1796.

32 GRO D/D G 1803 B-P fo.446, R. Cunningham to T. Guest, 31 March 1803: "we will extend our delivery to 20 Tons p. Wk to the 31st December next, exactly on the same terms of our present Contract..." For 1806, GRO D/D G 1806 A-T fo.34, Messrs Frere, Cook & Powell to T. Guest, 5 November 1806, and fos.68-76, various communications from Joseph Latham of Beaufort.
Appendix


34 Sheffield Central Library WWM P64-70, 'Demonstration of the Injury which the Nail-Trade will experience from the proposed Tax on Iron'.

35 Birmingham University Library (microfilm) journal of Joshua Gilpin, vol. XXVII (unpaginated), 11 November 1796.

36 See Atkinson & Baber, *Growth and Decline*, p.79, n.2.

37 GloRO D1086/F122, W. Lewis to J. Blagden Hale, 26 April 1792.

38 Birmingham University Library (microfilm) journal of Joshua Gilpin, vol. XIII (unpaginated), 1 August 1796.

39 GwRO D2.162 fo.233, RC to T. Erskine, 5 November 1797.
BIBLIOGRAPHY

(1) Manuscript Sources

Birmingham Reference Library
- Boulton & Watt MSS. Office Letterbooks.

Birmingham University Library
- Journals and Notebooks of Joshua Gilpin, 1790-1801. (Microfilms of originals in the Pennsylvania State Archives, Harrisburg, Pa.).

British Library
- Additional MSS.

Cardiff Central Library
- MS. 3.277. 'Journal of a Summer Excursion to the Iron Works at Merthyr Tidvil, Glamorganshire ...From Cardiff A.D. 1799 [by Robert Clutterbuck].
- Facsimile Diaries of William Thomas.
- D.R. Thomas, 'Richard Trevithick's Penydarren Locomotive', (typescript, W.134.4.).

Glamorgan Record Office
- D/D G. Dowlais Iron Company MSS.

Page 441
Bibliography

- D/D Pe. Penllyn Castle MSS.
- D/DXgc 12. Accounts of the 'Sympathetic Society'.
- D/D Xn 1. 'Private Memorandums beginning 3d Augt 1779 [by Thomas Vaughan]'.
- D/D Xn 3. 'Thomas Vaughan's Cash Book 1790 & 1791'.
- LTA. Land Tax Assessments.
- MS. 3.628. 'Case about Merthir Poor Rule'.
- QDF. Friendly Society Bonds.
- Q/SI. Quarter Sessions Indictment Books.
- Q/SJ. Commissions of the Peace.
- Q/SM. Quarter Sessions Minute Books.
- Q/SR. Quarter Sessions Rolls.
- WTA. Window Tax Assessments.

Gloucestershire Record Office
- Sotheron-Estcourt MSS. D1571/F136-37, papers of Edmund Estcourt; D1571/F141, papers of Thomas Estcourt.

Gwent Record Office
- D2.162. Letterbook of Richard Crawshay, 1788-97.
- Misc. MS. 448. 'Mr. Hanburys cost and Yields of Pig, Rod, Hoop and Sheet Iron, 1704'.
- Nantyglo & Blaina MSS. D.397.1664, lease of Beaufort ironworks; D.397.1668, copy will of Edward Kendall.

House of Lords Record Office

Merthyr Public Library
- Merthyr Tydfil Vestry Minute Book, 1799-1833.
National Library of Wales
- Cyfarthfa MSS. Letterbook of William Crawshay, 1813-1817.
- Dunraven MSS.
- Maybery MSS.
- Merthyr Tydfil Parish Registers.
- MS. 2873E.
- MS. 6582E. 'Glamorgan Mines & Minerals'
- MS. 11910E. 'Glamorgan Canal Navigation'
- MS. 15593E. Penydarren works, miscellaneous correspondence and accounts, 1786-88.
- LL/CC. Llandaff Diocese: Consistory Court records.
- LL/PDM. Llandaff Diocese: Petitions for the licensing of Dissenting Meetings.
- LL/QA. Llandaff Diocese: Bishop's Visitations, queries and answers.

Public Record Office
- C 103/181.
- C 108/135.
- C 12/1099/3.
- C 12/1657/15.
- C 12/1691/21.
- C 12/1753/28.
- C 13/1642/32.
- E 112/2094/75.
- E 112/2096/128.
- HO 42 series.
- KB 1/35 Michaelmas 1808/19.
Bibliography

Sheffield Central Library
- Wentworth Woodhouse Muniments. F64-67/71, assorted memorials re tax on pig iron, 1806.

Shropshire Record Office
- Lloyd-Jones MSS. 1781/6, correspondence of Gilbert Gilpin.

(ii) Official Publications

British Parliamentary Papers (BPP)

BPP 1803-04 (175.) XIII. Abstract of Returns Relative to the Expense and Maintenance of the Poor.

BPP 1806 (119.) XII. An Account of the Quantity and Value (Real and Official) of all British Iron and Iron Wares.

BPP 1810 (344.) IV. Report from the Select Committee on the Petition from Owners of Collieries in South Wales.

BPP 1814-15 (265.) XII. An Account of the Quantity of British Iron Exported during the last Ten Years.

BPP 1818 (82.) XIX. Abstract of Returns Relative to the Expense and Maintenance of the Poor.

BPP 1819 (117.) XVI. An Account of all Coals Carried Coastways...from all Ports in Great Britain and Scotland.

BPP 1824 (51.) V. Report from the Select Committee on Artisans and Machinery.
Bibliography

**House of Lords Sessional Papers 1830 (91.) CCLXXVII.**
Account of Coals Shipped from the Port of Cardiff to the Ports of Bristol and Bridgwater [1792-1829].

**House of Lords Sessional Papers 1830 (114.) CCLXXVII.**
Account of Coals Shipped from the Port of Newport to the Ports of Bristol and Bridgwater [1792-1829].

**BPP 1842 (380.) XV.** First Report of the Commissioners for Inquiring into the Employment and Conditions of Children in Mines and Manufactures.


**BPP 1842 (382.) XVII.** Appendix to the First Report of the Commissioners. Part 2.

**House of Commons Journals**

XLVIII (1788).
LV (1799-1800).

(iii) **Unpublished theses**


(iv) Newspapers

The Cambrian, 1804-1815.

Gloucester Journal, 1800.

(v) Reference works


- Dictionary of National Biography.

- Dictionary of Welsh Biography (1940).

- List of Sheriffs for England and Wales from the Earliest Times to
Bibliography


Victoria County History of Gloucestershire.

Victoria County History of Leicestershire.


(vi) Printed sources, pre-1850

<table>
<thead>
<tr>
<th>Author/Title</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Biography and Obituary, for the Year 1817 (1817).</td>
<td></td>
</tr>
<tr>
<td>J.T. Barber A Tour throughout South Wales and Monmouthshire (1803).</td>
<td></td>
</tr>
<tr>
<td>R. Burn The Justice of the Peace and Parish Officer (11th edn., 1767).</td>
<td></td>
</tr>
<tr>
<td>The Justice of the Peace and Parish Officer (21st edn, 1810)</td>
<td></td>
</tr>
<tr>
<td>- Fox</td>
<td>Cambrian Directory (Salisbury, 1800).</td>
</tr>
<tr>
<td>- Gentlemens</td>
<td>The Cambrian Tourist, or, Post-Chaise through Wales (6th edn., 1828).</td>
</tr>
<tr>
<td>N. Carlisle A Topographical Dictionary of the Dominion of Wales (1811).</td>
<td></td>
</tr>
<tr>
<td>'Cymro' 'Cursory Remarks on the Welsh Tours or Travels', Cambrian Register, II (1799), pp.422-50.</td>
<td></td>
</tr>
<tr>
<td>W. Davies General View of the Agriculture and Domestic Economy of South Wales (2 vols., 1815).</td>
<td></td>
</tr>
<tr>
<td>D. Defoe A Tour through the Whole Island of Great Britain (2 vols., 1927 [1724]).</td>
<td></td>
</tr>
<tr>
<td>Author</td>
<td>Title</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------------------------------------------</td>
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<tr>
<td>E. Donovan</td>
<td>Descriptive Excursions through South Wales and Monmouthshire</td>
</tr>
<tr>
<td>J. Evans</td>
<td>Letters Written during a Tour through South Wales</td>
</tr>
<tr>
<td>T. Evans</td>
<td>Walks through Wales, Containing a Topographical and Statistical</td>
</tr>
<tr>
<td>J. Fox</td>
<td>General View of the Agriculture of Glamorgan</td>
</tr>
<tr>
<td>'Gentleman'</td>
<td>A Pocket Vade-Mecum through Monmouthshire and Part of South Wales...</td>
</tr>
<tr>
<td>W. Gilpin</td>
<td>Observations on the River Wye, and Several Parts of South Wales</td>
</tr>
<tr>
<td>G. Hardinge</td>
<td>Miscellaneous Works</td>
</tr>
<tr>
<td>A.J. Johnes</td>
<td>An Essay on the Causes which have Produced Dissent from the</td>
</tr>
</tbody>
</table>
G. Lipscomb  A Journey into South Wales 
(1802).

B.H. Mallkin  The Scenery, Antiquities, and 
Biography of South Wales (1804).

The Scenery, Antiquities, and 
Biography of South Wales (2nd 
edn., 2 vols., 1807).

G.W. Manby  A Historic and Picturesque Guide 
from Clifton, through the 
Counties of Monmouth, Glamorgan, 
and Brecknock (Bristol, 1802).

J.H. Manners  Journal of a Tour through North 
and South Wales (1805).

G. Nicholson  The Cambrian Traveller's Guide 
and Pocket Companion (Stourport, 
1808).

The Parliamentary Register, XI 
(1800).

A.B.L.M. de Penhouet  Letters describing a Tour through 
Part of South Wales by a 
Pedestrian Traveller (1797).

J. Priestley  An Account of a Society for 
Encouraging the Industrious Poor 
(Birmingham, 1787).

H. Scrivenor  A Comprehensive History of the 
Iron Trade (1841).
<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Editions</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Skrine</td>
<td>Two Successive Tours throughout the Whole of Wales (1798).</td>
<td></td>
</tr>
<tr>
<td>J.P. Addis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. Thelwall</td>
<td>Poems, Written Chiefly in Retirement (Hereford, 1802).</td>
<td></td>
</tr>
<tr>
<td>W. Vanmildert</td>
<td>A Charge Delivered to the Clergy of the Diocese of Llandaff, at the Primary Visitation in August 1821 (Oxford, 1821).</td>
<td></td>
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<tr>
<td>D.C. Allen</td>
<td></td>
<td></td>
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<tr>
<td>R. Warner</td>
<td>A Walk through Wales in August 1797 (3rd edn., 1799).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A Second Walk through Wales... in August and September 1798 (1799).</td>
<td></td>
</tr>
<tr>
<td>J. Wilkes &amp; G. Barfoot</td>
<td>Universal British Directory (1795).</td>
<td></td>
</tr>
<tr>
<td>H. Wigstead</td>
<td>Remarks on a Tour to North and South Wales in the Year 1797 (1800).</td>
<td></td>
</tr>
<tr>
<td>J. Wilson</td>
<td>A Biographical Index to the Present House of Commons (1806).</td>
<td></td>
</tr>
<tr>
<td>J.G. Wood</td>
<td>The Principal Rivers of Wales Illustrated (2 vols., 1813).</td>
<td></td>
</tr>
</tbody>
</table>

Page 451
(vii) **Printed sources, post-1850**

**J.P. Addis**


**D.G.C. Allan**


**P. Anderson**

*In the Tracks of Historical Materialism* (1983).

**C.R. Andrews**


**T.S. Ashton**


Iron and Steel in the Industrial Revolution (Manchester, 1924).


Page 452
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. Atkinson &amp; C. Baber</td>
<td>The Growth and Decline of the South Wales Iron Industry, 1760-1880: An Industrial History (University of Wales/Board of Celtic Studies social science monograph no.9, Cardiff, 1987).</td>
</tr>
<tr>
<td>T.M. Bassett</td>
<td>The Welsh Baptists (Swansea, 1977).</td>
</tr>
<tr>
<td>Author</td>
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<td>Author(s)</td>
<td>Title</td>
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<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>H. Carter &amp; S. Wheatley</td>
<td>Merthyr Tydfil in 1851: A Study of the Spatial Structure of a Welsh Industrial Town (University of Wales/Board of Celtic Studies social science monograph no.7, Cardiff, 1982).</td>
</tr>
</tbody>
</table>
|                           | 'Dr. Joseph Priestley, John Wilkinson and the French Revolution, 1789-1802', Transactions of the Royal


E.L. Chappell

Historic Melingriffith: An Account of Pentyrch Ironworks and Melingriffith Tinplate Works (Cardiff, 1940).

P. Clark


J.S. Cohen


S. Cohen


L. Colley

'Whose Nation? Class and National Consciousness in
Bibliography


A. Cordell

The Fire People (1972).

P.J. Corfield


P.J. Corfield & C. Evans


W.H.B. Court


J.E. Cronin


G. Crossick


M.J. Daunton


Coal Metropolis: Cardiff, 1870-1914 (Leicester, 1977).

A.C. Davies

'The Old Poor Law in an Industrialising Parish: Aberdare,
Bibliography

D. Davies

The Influence of the French Revolution on Welsh Life and Literature (Carmarthen, 1926).

E.T. Davies

Religion in the Industrial Revolution in South Wales (Cardiff, 1965).

H.M. Davies


J. Davies


J. Davis


P. Deane


H.W. Dickinson

John Wilkinson, Ironmaster (Ulverston, 1914).
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title and Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Ellis</td>
<td>'A Dynamic Society: Social Relations in Newcastle-upon-Tyne, 1660-1760', in P. Clark ed. <em>The Transformation of English</em></td>
</tr>
</tbody>
</table>
Bibliography


Bibliography


B. Franklin The Autobiography and Other Writings (Harmondsworth, 1986).


A. Goodwin  
'Wood's Halfpence', English Historical Review, LI, 204 (1936), pp.647-74


R.Q. Gray  

J.T. Griffiths  

S. Griffiths  
Guide to the Iron Trade of Great Britain (1873).

Guest, Lady Charlotte  

C. Hadfield  

W.O. Henderson  

H.B. Hancock & N.B. Wilkinson  
<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. Harris</td>
<td><em>Of Bread and Guns: The World Economy in Crisis</em> (Harmondsworth, 1983).</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>D. Hey</td>
<td>The Rural Metalworkers of the Sheffield Region: A Study of Rural Industry before the Industrial Revolution (Leicester University Department of English Local History Occasional Papers, 2nd ser. no.5, 1972).</td>
</tr>
<tr>
<td>J.R. Hume &amp; J. Butt</td>
<td>'Muirkirk, 1786-1802: The Creation of a Scottish Industrial</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title and Details</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>C.H. James</td>
<td><em>What I Remember about Myself and Old Merthyr</em> (Merthyr, nd).</td>
</tr>
<tr>
<td></td>
<td>'Reading History: Modern Wales', <em>History Today</em>, 37 (February 1987), pp.49-53.</td>
</tr>
<tr>
<td>Author</td>
<td>Title</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td><em>The Industrial Development of South Wales, 1750–1850</em> (Cardiff, 1950).</td>
</tr>
</tbody>
</table>
| B.L.C. Johnson   | 'The Foley Partnerships: The Iron Industry at the End of the
Bibliography

Charcoal Era', EcHR, 2nd ser. IV, 3 (1952), pp.322-40.

R. Johnson


H.G.H. Jolliffe

The Jollifes of Staffordshire and their Descendants (1892).

D. Jones


D. Jones & A. Bainbridge


D.J.V. Jones


<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Jones</td>
<td>A History of Printing and Printers in Wales to 1810 (Cardiff, 1925).</td>
</tr>
<tr>
<td>R. Merfyn Jones</td>
<td>The North Wales Quarrymen, 1874-1922 (Cardiff, 1982).</td>
</tr>
<tr>
<td>Author</td>
<td>Reference</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
N. Kirk  

K.D. Klingender  
Art and the Industrial Revolution (St. Albans, 1972).

W.R. Lambert  

D.S. Landes  

J. Latimer  

R.L. Lee  
The Town that Died (1975).

T. Lewis  
Hen Dy Cwrdd Cefn Coed Y Cymer (nd).

P. Linebaugh  

C.R. Littler  
The Development of the Labour Process in Capitalist Societies:
<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Lloyd</td>
<td>A Comparative Study of the Transformation of Work Organization in Britain, Japan and the USA (1982).</td>
</tr>
<tr>
<td>J.B. Lowe</td>
<td>Welsh Industrial Workers Housing, 1775-1875 (Cardiff, 1977).</td>
</tr>
<tr>
<td></td>
<td>'Knowledge and Power', in F.H. Stephens ed. Firms, Organisation and Labour: Approaches to the</td>
</tr>
</tbody>
</table>
Bibliography

J.D. Marshall
Economics of Work Organization (1984), pp.146-64.

The Old Poor Law, 1795-1834 (2nd edn., 1985).

J. Martin

K. Marx

P. Mathias


G. Mee

W. Menelaus
'President's Address', Transactions of the South Wales
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.E. Minchinton</td>
<td>'The Old Board of Agriculture', English Historical Review, LXXIV, 290, (1959), pp. 41-69.</td>
</tr>
<tr>
<td>T.L. Nicholas</td>
<td>The South Wales Coal Industry, 1841-75 (Cardiff, 1958).</td>
</tr>
<tr>
<td>W. Morgan</td>
<td>The Vaynor Handbook (Merthyr, nd).</td>
</tr>
<tr>
<td>J.H. Morris</td>
<td>The Vaynor Handbook (Merthyr, nd).</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
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<tr>
<td>-----------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>H. Murton</td>
<td>Recollections of Dowlais, 1808-12 (nd).</td>
</tr>
</tbody>
</table>
| B.O. Osborne    | 'Patching, Scouring and Commoners: The Development of an
<table>
<thead>
<tr>
<th>Author(s)</th>
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<th>Source/Notes</th>
</tr>
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<tbody>
<tr>
<td>J.A. Owen</td>
<td>'Chronological Date Sequence for Events for the Dowlais Ironworks', Merthyr Historian, I (1976), pp.7-16.</td>
<td></td>
</tr>
<tr>
<td>E. Phillips</td>
<td>A History of the Pioneers of the Welsh Coalfield (Cardiff, 1925).</td>
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<tr>
<td>E. Poole</td>
<td>The Illustrated History and Biography of Brecknockshire (Brecon, 1886).</td>
<td></td>
</tr>
<tr>
<td>M. Poster</td>
<td>Foucault, Marxism and History: Mode of Production versus Mode of Information (Cambridge, 1984).</td>
<td></td>
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<tr>
<td>I. Prothero</td>
<td>Artisans and Politics in Early Nineteenth-Century London: John</td>
<td></td>
</tr>
</tbody>
</table>
Bibliography

Gast and his Times (Baton Rouge, La., 1979).


J. Randall The Wilkinsons (Madeley, 1879).


T. Rees The History of Protestant Nonconformity in Wales (2nd. edn., 1883).


J. Rule


C. Sabel & J. Zeitlin


R. Samuel

'Workshop of the World: Steam Power and Hand Technology in Mid-Victorian Britain', History Workshop, 3 (Spring 1977), pp.6-72.


R.G. Schafer

'Genesis and Structure of the Foley "Ironworks in Partnership"
B. Schwarz  

L. Schwarz  

C. Skeel  

S. Smiles  
Industrial Biography: Iron Workers and Tool Makers (1863).

D. Smith ed.  
<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.T. Svedenstierna</td>
<td><em>Svedenstierna's Tour of Great Britain, 1802-03: The Travel</em></td>
</tr>
</tbody>
</table>
A.J. Taylor  

G. Taylor  

J.L. Taylor  

P.D.G. Thomas  

E.P. Thompson  


The Poverty of Theory and Other Essays (1978).

N.W. Thompson


F.W. Torrington ed.

House of Lords Sessional Papers: Session 1799-1800, Volume 1 (Dobbs Ferry, NY, 1974).

J.M. Treadwell

Bibliography

J. N. Watson

B. Trinder

L. D. Trotsky

J. M. Western

A.C.S. Tucker

D. Verey

S. Wallman ed.

J. Walsh
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<th>Author</th>
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<th>Details</th>
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<tr>
<td>H. Webb</td>
<td>Dic Penderyn and the Merthyr Rising of 1831 (Swansea, 1956).</td>
<td></td>
</tr>
<tr>
<td>R. Wells</td>
<td>Insurrection: The British Experience, 1795-1803 (Gloucester, 1983).</td>
<td></td>
</tr>
<tr>
<td>J.R. Western</td>
<td>'The Volunteer Movement as an Anti-Revolutionary Force',</td>
<td></td>
</tr>
<tr>
<td>C. Wilkins</td>
<td>The South Wales Coal Trade and its Allied Industries (Cardiff, 1888).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The History of the Iron, Steel and Tinplate Trades (Merthyr Tydfil, 1903).</td>
<td></td>
</tr>
</tbody>
</table>
Bibliography

T.S. Willan


G. Williams


Artisans and San-Culottes: Popular Movements in France and Britain during the French Revolution (1968).

The Merthyr Rising (1978).


The Welsh in their History (1982).

When was Wales? *A History of the Welsh* (Harmondsworth, 1985).

J.R. & G. Williams

*History of Caersalem, Dowlais Welsh Baptist Church* (Llandysul, 1967).

L.J. Williams

'A Carmarthenshire Ironmaster and the Seven Years War', *Business History*, II (1959), pp.32-43.

J. Zeitlin

'From Labour History to the History of Labour Relations' *EcHR*, 2nd ser. XL, 2 (1987), pp.159-84.