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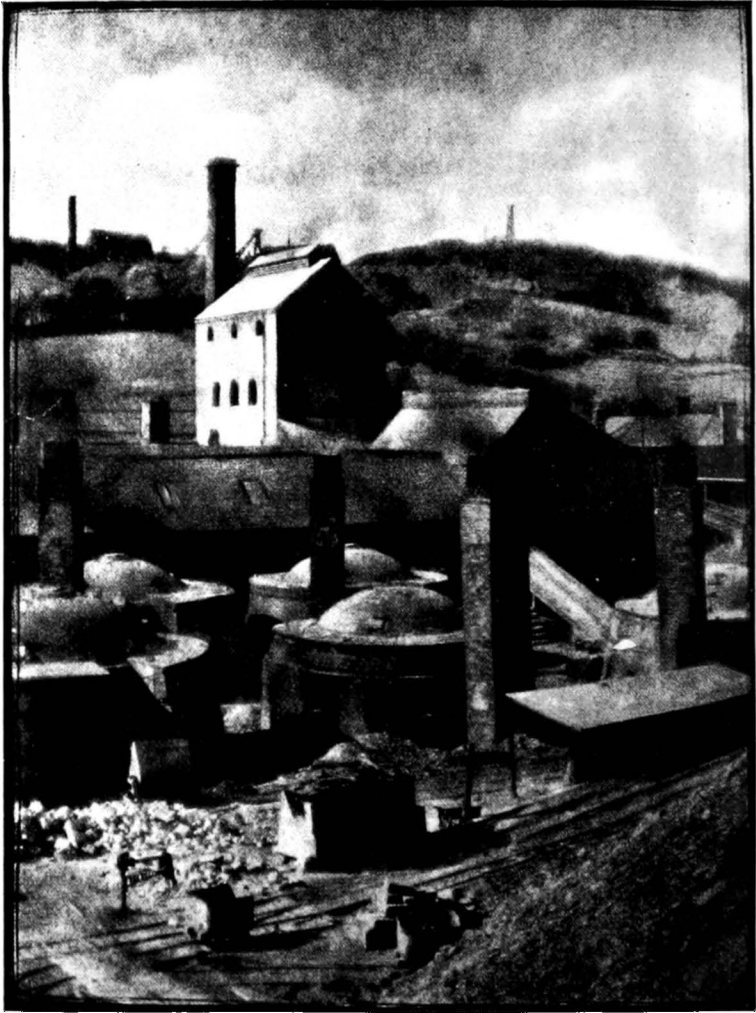
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BY THE SAME AUTHOR
**MODERN JAPAN AND ITS
PROBLEMS**



BRICK WORKS IN THE BLACK COUNTRY

[Frontispiece

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THE INDUSTRIAL DEVELOPMENT
of BIRMINGHAM
AND THE BLACK COUNTRY
1860-1927

By G. C. ALLEN, M.Com., Ph.D.,
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UNIVERSITY OF BIRMINGHAM

With an Introduction by
J. F. REES, M.A., M.Com.
PROFESSOR OF COMMERCE, UNIVERSITY OF
BIRMINGHAM

ILLUSTRATED

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P R E F A C E

THE economic development of Birmingham and the Black Country during the eighteenth century has received a good deal of attention, for the part played by the area in the growth of the new iron and engineering trades has necessarily claimed the notice of those who are concerned with modern industrial history. But the development of the district during the nineteenth century has been almost entirely neglected, and nothing at all has been done to describe and to interpret the great changes which have occurred in the course of the last seventy or eighty years. Yet these changes are not only of great intrinsic interest, but they reflect very clearly the forces which of late have been modifying the industrial character of the country as a whole.

For many years before the present work was begun it had been obvious that the industrial life of Birmingham and District was undergoing a process of transformation, which during the war and the post-war depression was immensely accelerated. Many of the older trades, it was seen, were decaying; while at the same time a number of new manufactures were making a remarkably rapid advance. It was clear that, as a result of these developments, the industrial structure of the area during the third decade of the twentieth century was made up of very different constituents from those of which it was composed fifty or sixty years previously. It was thought desirable, therefore, to make an investigation of these changes with the object of discovering their magnitude, the period when they began, and the causes which brought them about. This contribution to regional economic history, which was made possible through a generous endowment,¹ has resulted.

Fortunately, a study of the leading West Midland industries had been made, under the editorship of Samuel Timmins, when the British Association visited Birmingham in 1866. The accounts of the trades which were included in *Birmingham and the Midland Hardware District* varied greatly in value from the standpoint of the economic historian; but they provided detailed information, which could be supplemented from numerous

¹ See note on p. xv.

other sources, concerning certain aspects of the local industrial structure. It was thus possible to obtain a more comprehensive and accurate conception of the character of the area during the sixties than at any subsequent or preceding date. The period when these studies were made, moreover, happened to correspond roughly to a point of time which immediately preceded an era of far-reaching industrial change. This fortunate coincidence, then, settled the point of departure in this investigation at somewhere during the early sixties. It was thought necessary, however, that the work should begin with a brief account of the development of the area up to that date, as this would serve to bring out clearly the changes in the direction of industrial growth and in the tendencies which were to be investigated. So the book begins with an outline of the district's early history. A detailed account is then given of the character, size and localization of the leading trades as they appeared in 1860; while the main subject-matter of the succeeding chapters consists of a description of the changes in the relative magnitude of the different trades, of the decay of the older manufactures and the rise of new ones, and of the general transformation in the area's industrial activities.

The scope of the work is, however, wider than this; for my second object has been to examine the forms of industrial organization which have existed in the area at different times. Along with the changes in the relative importance of the leading industries there has occurred during the last sixty years an equally significant transformation in the methods of manufacture and of marketing, in the scale of production, and in the relation between the individual business units. So, after describing the way in which the major trades were organized in 1860, I have tried to show how and when the new forms of organization began to displace the old, and what forces were responsible for the modifications which have taken place.

This book, then, resolves itself into two main parts: first, a history of the changes which have occurred since 1860 in the industrial interests of Birmingham and the Black Country; and, second, a history of certain aspects of industrial organization within the area. The multiplicity of the district's trades has made it impossible for me to describe any one of them in great detail; while certain minor manufactures have necessarily been

ignored. Some important aspects of industrial organization, moreover, have been passed over, or have not received the attention which they merit, and which they could claim in a specialized study. My aim has been to give a picture of general industrial change, to record faithfully the outstanding characteristics of a great manufacturing area during the course of the last seventy years, and to indicate the main trends and influences to which it has been subjected.

Of the sources of the written materials which have been consulted the excellent Birmingham Collection in the Birmingham Public Reference Library has proved the most useful; while the Wolverhampton Public Library, the Coventry Public Library and private collections have also been found to contain valuable information. The earlier part of the work has naturally depended to a large extent on these written materials. Yet, since the history covers a period within the memory of men now living, it has been possible to gather the bulk of the data required for the work, and to check and to supplement printed authorities, by personal inquiries among those who are, or who have been, connected with local industries. I succeeded in discovering within each of the major trades a few representative firms who were willing to assist me, and it has been from interviews with their proprietors and officials that the most valuable part of the information has been obtained. This applies particularly to the sections of the book which deal with organization. In some industries trade associations and trade union officials have been consulted; while another important source of material has consisted of works histories and the private publications of certain old-established concerns.

I have not thought it desirable to give references to the sources of the information which has been gleaned from interviews or from works histories and souvenirs, for the majority of the firms, in providing information, expressed a wish that no mention should be made of them. This accounts for the paucity of references in the latter part of the book, which is based almost entirely on personal inquiries; but these omissions are not serious, as statements concerning recent developments can be easily checked by consultation with business men engaged in trades to which the statements refer. For similar reasons the names of existing concerns have not been mentioned, except

when the context has made their identity clear to anyone in close touch with West Midland industrial life.

Since it is not possible for me to express my indebtedness to every member of the local business community who has generously given of his time in describing to me the growth of his industry, and in explaining the organization and the processes of manufacture, I should like to offer my thanks to all firms in the Midland area who have supplied me with data for this work. The secretiveness and lack of concern with matters of general interest with which the British business man is sometimes charged have certainly not been conspicuous (with a few notable exceptions) among local manufacturers. Indeed, the work could not have been carried out without their close co-operation. In particular I should like to record my obligations to the following, either because they supplied me with material of special value, or because they put me in touch with sources of information in connection with trades in which the data were scanty: Mr Dudley Evans, Secretary of the Iron Exchange, Birmingham; Mr Edwards, Secretary of the Birmingham Association of Gunmakers (for valuable information concerning the old gun trade); Mr R. E. Freeman, Secretary of the Brassfounders Employers' Federation; Colonel F. Goode (for a valuable account of the brush trade); Mr Gibbard, Secretary of the National Association of Amalgamated Brassworkers; Mr J. W. Hall (for much useful material concerning the Staffordshire iron trade); Mr F. Hickinbotham of Messrs Rabone Bros. & Co.; Mr G. Head of Tipton (for information about the local pig-iron industry); Mr Edgar Harcourt (for help in connection with the history of the brassfoundry industry); Mr Hoadley (for an account of the history of the bedstead trade); Messrs Joseph Gillott and Messrs Leonardt (for material concerning the pen trade); Mr G. W. Mullins of the Cold Rolled Brass and Copper Association; Messrs Legge and Chilton (for information concerning the lock trade); Mr C. E. Partridge of Rubery, Owen & Co., who went to great trouble to provide me with data in connection with the Darlaston industries; the Staffordshire Ironmasters' Association; Mr G. E. Wright, Secretary of the Birmingham Chamber of Commerce; Mr H. W. Ward (for a history of the machine-tool trade), and Mr H. Reece (for information concerning the chain industry). I have to record my

special indebtedness to the Birmingham Small Arms Co. Ltd. for their kindness in lending me a detailed history (in manuscript) of their firm. I should also mention that I have made use of several theses which have been submitted for the degree of Master of Commerce at Birmingham University. The most valuable of these proved to be a *History of the Midland Glass Trade*, by G. N. Sandilands, and *The History, Development and Organization of the Birmingham Jewellery and Allied Trades*, by J. C. Roche. Mr Roche also did useful work in typing and indexing the notes which I had obtained from printed sources.

Several local firms supplied me with photographs, from which certain of the illustrations in this book have been prepared. The concerns which were good enough to help me in this way were the Austin Motor Co. Ltd., the Birmingham Small Arms Co. Ltd., British Pens Ltd., Messrs Cadbury Bros. Ltd., Messrs Earle, Bourne & Co. Ltd., Alfred Hickman Ltd., the Metropolitan-Cammell Carriage, Wagon and Finance Co. Ltd., and Messrs Taylor & Challen Ltd. My thanks are due to these firms, to Mr A. Fenn for lending me a photograph from his collection, and to Mr Hugo van Wadenoyen, F.R.P.S., for his two photographic studies of the Black Country.

I am very grateful to the staffs of the local reference libraries for their assistance during the period when I was consulting printed records, and I am particularly indebted to the officials of the Birmingham Public Reference Library, whom I put to great trouble. I have also to thank Miss E. C. M. Shanks for help in the preparation of the index.

Finally, I must record my deep obligations to Professor J. F. Rees, who supervised the research and gave me invaluable advice at every stage of the work.

G. C. ALLEN.

MAP OF BIRMINGHAM AND THE BLACK COUNTRY
SHOWING CHIEF INDUSTRIAL TOWNS AND VILLAGES.



REFERENCES

SCALE: 2 MILES TO AN INCH.
 BOUNDARY OF THE CITY OF BIRMINGHAM (1911) _____
 AND OF THE BOROUGH OF WOLVERHAMPTON (1927)
 BOUNDARY OF BIRMINGHAM & THE BLACK COUNTRY -----
 (AS DEFINED IN PART I, CHAP. I)

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INTRODUCTION

THE genesis of this book demands a word of explanation. Four years ago "A Birmingham Firm" put at the disposal of the University of Birmingham a sum of money with the request that the Faculty of Commerce should undertake a survey of the industrial development of Birmingham and District during the last half-century.¹ The main lines of the proposed inquiry were defined as an examination of the nature of the leading industries, their relative position, the scale of operations, the methods of organization and the distribution of the labour force. The endowment enabled the University to appoint a Research Fellow in Industrial History. Fortunately, Mr G. C. Allen, a graduate of the University and a native of the Midlands, returned from Japan at this juncture and was elected to the Fellowship. Those who have met him during the four years he has been engaged in collecting material will recognize that the confidence he has inspired has been an important factor in securing that co-operation with business men which was essential for his purpose.

The first problem we had to solve was that of the demarcation of the area within which the inquiry was to be confined. Close consideration of this was necessary because those who had conceived the idea of the survey were anxious that particular stress should be laid on the evolution of industrial organization. It was at once obvious that Birmingham, though so many of its industries were peculiar to itself, had the most intimate relations with the Black Country. So the limits of a definite industrial region were carefully drawn. As the work advanced, the preliminary decisions with respect to this area were discovered to be fully justified. The contrast between Birmingham and the Black Country provided a major theme. Many forces which have been at work in effecting the economic adjustments of the last half-century were brought out into sharp relief. Migration of industries within the region has long been a recognized fact. An acute observer some ninety years ago remarked that, "as

¹ In all public references to this piece of research the endowment has always been ascribed to "A Birmingham Firm." Now that the work is complete, the benefactors have agreed that their identity may be revealed. The University would not have been in a position to entrust the Faculty of Commerce with the task of preparing this survey had it not been for the financial assistance of Cadbury Brothers Ltd., Bournville.

the trade in light and fancy articles advanced, machinery and the beneficial division of labour were introduced. Large colonies of ingenious workmen flocked to the town (*i.e.* Birmingham), the simple operations of the hammer and anvil retired. The 'smiths' and 'lorimers' retreated to Walsall, Willenhall and Wednesbury—the 'naylor's' were found as constituting the mass of the population in various districts dependent on Dudley and Stourbridge."¹ The present survey illustrates the inter-relations between Birmingham and the Black Country in a more scientific spirit and in much greater detail. Every effort has been made to account for changes and so to exhibit the working of the principles which have wrought far-reaching changes in the industrial structure of the region.

The promoters of the survey, while they wished the method to be historical, made it a definite instruction that it should be brought down to the present day. When we considered what precise interpretation should be placed on the last half-century, which was admittedly only a rough indication, it was decided to make 1860 the point of departure. There were two reasons for this decision. The sixties witnessed the culmination of the industrial development of the first part of the nineteenth century. We also had to hand a valuable account of the position of the chief industries in the early sixties. In *The Industrial History of Birmingham and the Midland Hardware District* Samuel Timmins certainly succeeded in his aim of collecting and preserving "a large and important mass of industrial facts."² It is true that the contributions which he included are of unequal merit, but the book as a whole is a mine of information. Without it the present project would have been a much more difficult one. To begin to write industrial history from such a recent date is something of a novelty. Large books which treat the subject as a whole, as well as special studies devoted to particular industries, usually fail to carry the story beyond the middle of the nineteenth century. An attempt is here made to concentrate attention on a restricted area and to present its development in the last sixty or seventy years as a matter of objective history.

Perhaps enough has been said to indicate what our general instructions were and how they were interpreted. A word ought

¹ William Hawkes Smith: *Birmingham and South Staffordshire* (1838).

² Samuel Timmins: *The Resources, Products and Industrial History of Birmingham and the Midland Hardware District* (1866).

to be added about the method of procedure. Mr Allen could give all his time to the searching for printed and manuscript material and to arranging interviews with business men who were likely to be able to supply special information. As has been mentioned, he proved himself a most competent investigator. He assumes full responsibility for the survey now presented to the public. But it ought to be added that the endowment of this important piece of research had a stimulating effect on the general research work of the Faculty. Mr Allen has been assisted at certain points by investigations simultaneously undertaken by some of our graduate students. Two holders of the William Morton Scholarship, who were required by the conditions of the award to examine "A Midland Industry," relieved Mr Allen to a considerable extent of the burden of conducting personal inquiries in the subjects they had chosen. Mr J. C. Roche prepared a valuable survey of the history of the Jewellery Trades and Mr D. N. Sandilands of the Glass Industry. These dissertations are frequently referred to in the notes to the present work. We greatly regret that the sudden death of another researcher, Mr Edmund Pritchard, deprived us of the co-operation which he had promised and was so well qualified to give with respect to the history of the South Staffordshire coalfield.¹

Historical interpretation is simply the presentation of generalizations which are provisionally acceptable. With the advance of knowledge these generalizations nearly always require to be qualified. Possibly economic history has suffered to a peculiar degree from hasty generalization. What was true of one area has been too often assumed to be representative of the country as a whole. When it is discovered that this is not necessarily so, critics are inclined to react too violently against the accepted view. This is what has happened with respect to the "Industrial Revolution." The conceptions which have become current about the economic and social changes of the later eighteenth and early nineteenth century have now been assailed. It is of

¹ Mr Roche's thesis was published in 1927 as a supplement to *The Dial*, by the Dennison Watch Case Company Ltd., in collaboration with the Birmingham Jewellers' and Silversmiths' Association. The typescript of Mr Sandilands' work may be consulted in the Birmingham University Library. Mr Pritchard's papers are in the possession of his friend, Mr James Cossar, of the Oxford School of Geography.

course true that an account of industrial development which is based on selected facts must be inadequate. To get a more just view of the "Industrial Revolution" the regional method should be adopted. Out of a group of such studies the material for new generalizations will emerge. It is a commonplace that the earlier accounts of the "Industrial Revolution" were based too exclusively on the history of the textile industries. The invention of machinery and the application of steam-power to its operation seemed so important that changes were assumed to have taken place more rapidly and more generally than was actually the case. The study of the West Midlands supplies a corrective. Here the textiles played an insignificant part. While it was one of the first areas to be industrialized, it was slow to adopt the "factory system" which is popularly associated with that process. Unlike Lancashire, the West Riding of Yorkshire, the Clyde Valley, or South Wales, it has never had a predominant staple industry. The multiplicity of its activities are at first sight bewildering. It is possible to quote instances of continuity, such as that of the industries of Walsall, of which Plot quaintly remarks in the seventeenth century that they "chiefly relate to somewhat of Horsemanship."¹ There have been migrations into the area, such as the coming of needles to Redditch. Examples of transition from a decaying trade to a new application of the skill of the craftsman are numerous, but perhaps the rise of the jewellery trade on the ruins of the buckle and trinket trades is the best. Some trades have enjoyed considerable reputation and then virtually disappeared. This was the fate of papier mâché, which once commanded a wide market for its products. In the Black Country local mineral resources, particularly of coal and iron, exercised a decisive influence. The consequences of their gradual exhaustion are clearly indicated in its history. But even here industries were established and maintained which, on the face of it, seem surprising developments, such as the making of ships' cables and anchors.

The ingenuity of local historians has been exercised in trying to discover and account for the stages in the industrial growth of the area. As far as Birmingham is concerned, apart from the fact that the small community had the advantage of a market, little is known of its activities in the Middle Ages. We gather

¹ Plot, *History of Staffordshire* (1686), p. 376.

from sixteenth-century references that the raw material of the district was worked up into semi-manufactured or manufactured goods. In the first category falls the preparing of leather by a dozen or more tanneries; and in the second, the output of numerous small forges, where smiths made bits, spurs, nails and other iron articles.¹ It is possible to indicate roughly what additions were made to these occupations of the people in each subsequent half-century.² But when it comes to explaining why Birmingham became the centre of so many and such various industries, writers resort either to platitudes or to an enumeration of minor causes, the cumulative effects of which do not strike one as likely to have had any decisive influence. Paradoxes abound. The town, which since it was not incorporated afforded an asylum to Dissenters, who are said to have laid the foundation of its industrial greatness, was also the scene of "Church and King" riots, of which some of the Nonconformists had to bear the brunt. A people whose "virile and enterprising individualism" is alleged to be the key to its prosperity has always been peculiarly susceptible to leadership and mass-suggestion. A place where the skill of the craftsman is given as a reason for its attracting and holding power has made singularly little positive effort to train its workpeople. The question of the localization of industry is much more complicated than it is often supposed to be. Even such an apparently simple case as that of the growth of the cotton industry in Lancashire, particularly the distribution of the different processes within the area, presents considerable difficulties. In the West Midlands one hesitates to be dogmatic. Mr Allen notices some of the explanations commonly put forward; but the general effect of his research is to warn us against generalizations on the subject.

It is obvious that the enterprise of certain individuals made the most of the opportunities which accidentally came in their way. Of this the career of Matthew Boulton is an outstanding example. He inherited a typical eighteenth-century Birmingham business. When he removed from Snow Hill to Handsworth, and occupied his new buildings at Soho, his intention was to

¹ On this question Professor Conrad Gill has kindly allowed me to read his essay on "Birmingham in the Sixteenth Century," which he intends to publish together with other studies of the history of Midland municipal development.

² See chapters in R. K. Dent, *The Making of Birmingham* (1894); the rise of the brass and copper trades is dealt with in H. Hamilton, *The English Brass and Copper Industries to 1800* (1926).

develop that business by setting himself to improve the standard of quality of the metal "toys" he was engaged in making. The gradual change-over to engineering and the eventual foundation of Soho Foundry were due to an accidental chain of events. Financial embarrassments led Dr John Roebuck of the Carron Ironworks to transfer his rights in James Watt's engine to Boulton. Otherwise, Watt might never have left Scotland. It may, indeed, be said that the "artificial" nature of this enterprise was demonstrated by the event. That it succeeded at all was due to the genius of Watt, combined with the business acumen of Boulton. Soho was, and continued to be, an exception. The principles which it exhibited had no influence on the general practice of the district. It was a "factory" in an area of small workshops. Problems of lay-out were grappled with, systems of accounting and of the keeping of records of orders were elaborated, methods of wage payment and industrial insurance were adopted; in fact, the organization would do credit to modern business practice.¹ But all this was of no interest to the small masters of Birmingham. Nor had they any use for the products of Soho. When Boulton playfully boasted to James Boswell that he was selling power, which all the world desired, he might have added that there was no particular demand for it in the immediate neighbourhood. Engineering was hardly appropriately placed in Birmingham. There is a curious *lacuna* in its history. Boulton and Watt were pioneers who had no immediate successors in the district.

What may be called the normal process of industrialization in the area followed very different lines, and is marked by some interesting characteristics. Where the "factory system" was adopted outright the employer had to find capital and take upon himself the risks of the enterprise. He usually financed his venture by entering into partnership with a person or persons of means, or by private borrowing. For development he depended on the investment of profits in the business. It has been contended that this fact explains the intense degree of exploitation

¹ The records of the Boulton-Watt firm are preserved in the Birmingham City Library. Some indication of the abundance and variety of the material may be gathered from *Capital and Steam-power*, by John Lord (1923), and from *James Watt and the Steam Engine*, by H. W. Dickinson and Rhys Jenkins (1927). It still awaits comprehensive examination. As the means of constructing the history of the pioneer engineering firm in the world its value can hardly be exaggerated.

of labour in the early decades of the nineteenth century. The lower the labour cost the larger the surplus which would be available for capital development. When the mechanism of the joint stock company provided means for mobilizing the savings of the small investor the pressure on the standard of living of the worker was somewhat relaxed.¹ These generalizations hardly apply to this area. The remarkable fact which emerges from a study of organization is the extent to which the entrepreneur evaded the problems which are involved in the direct employment of labour. Proprietors of coal-mines in the Black Country relied on the "butty" system, by which small subcontractors engaged to get coal at an agreed price and employed their own labour for the purpose. They assumed the odium of exploitation and did not shrink from adopting methods in which the proprietors would not have had the opportunity, even if they had had the desire, to indulge. The petty tyrannies of the system, and particularly its intimate connection with the practice of "truck," are amply illustrated in contemporary Parliamentary Reports. Similar arrangements were made in the ironworks, where different classes of "overhands" with their respective gangs undertook the work. It was in effect the application to large unified enterprises of the principles which were appropriate to the domestic system. In the industries where small units survived the factor performed the function of supplying the credit which the outworker required. This was the common organization of the Birmingham trades until the middle of the nineteenth century, and survived to a much later date in some.

Even when workers were collected in factories the practices of the earlier period persisted. One of the most interesting points which Mr Allen makes with respect to the stages in the development of industrial organization is that there was a phase when the factory system was in a state which may be called immature. The employer provided the workplace and its chief equipment, but he did not exercise control through a discipline imposed by foremen appointed by himself. "Overhands" engaged and paid the labour. What wages they received was not the immediate concern of the factory owner. If there was exploitation—and there is every reason to believe that there was

¹ There are some suggestive remarks on this subject in G. D. H. Cole's *Short History of the British Working Class Movement*, vol. i., pp. 179-180.

—the responsibility for it rested on the shoulders of the sub-contractors. The defects of this system are fully demonstrated by Mr Allen. No doubt it was to a considerable degree a solution of the problem of regimentation which was a great difficulty in the early stages of the factory system. Outworkers did not take kindly to the discipline of the factory. Complaints of bad time-keeping are constantly made where men who had been brought up in the looser domestic system were introduced into a factory. In the cutlery trades of Sheffield and the felt-hat industry of Stockport and Denton parallels to the Birmingham immature stage of factory development may be found. Employers, since they had not elaborated methods of supervision and costing systems, were attempting to make what they could from the economies of a larger unit of production without embarrassing themselves with the more troublesome questions of wage rates, hours of labour and general factory conditions. Except for a few industries, such as that of pen manufacture in Birmingham, the employers were men of limited resources. When Richard Cobden was commenting on John Bright's election as Member of Parliament for Birmingham in 1857 he drew an interesting contrast between Manchester and Birmingham. "I have always had [the opinion]," he wrote to Bright, "that the social and political state of that town [Birmingham] is far more healthy than that of Manchester; and it arises from the fact that the industry of the hardware district is carried on by small manufactur-ers . . . whilst the great capitalists in Manchester form an aristocracy, individual members of which wield an influence over sometimes two thousand persons. . . . There is a freer intercourse between all classes than in the Lancashire town, where a great and impassable gulf separates the workman from his employer."¹

It is impossible to indicate here the significance of the conclusions to which Mr Allen's examination of the later development of the region leads. He reveals the fortunes of the older industries under the strain of the great depression of the late seventies and early eighties of the last century. The rise of new industries and the effects of the Great War and post-war conditions upon them are also carefully studied. In broad terms, adaptation has involved increasing concentration on the production of finished goods of high quality. The West Midlands may be said to

¹ Lord Morley, *Life of Richard Cobden*, vol. ii., chapter viii.

INTRODUCTION

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have anticipated the course which British manufactures as a whole seem now to be taking. It has maintained its supremacy in spite of the loss of cruder and heavier types of industry. How this has been done cannot perhaps be fully explained; but the concluding sections of this study offer many suggestions which contribute towards an answer to the question. That is as far as we can go. The present is the outcome of the past and the forerunner of the future. A survey such as the present one brings tendencies to light and enables the student to correct old and enunciate new generalizations. It becomes the basis for a better understanding of industrial evolution. We are also not without hope that this study of the history and structure of industry will appeal to the business man and serve to stimulate his interest in the wider bearings of his everyday activities.

J. F. REES.

BIRMINGHAM,
June 1929.

APPENDICES

APPENDIX A

STATISTICAL TABLES

TABLE I

POPULATION OF BIRMINGHAM AND DISTRICT, 1831-1861

(Estimated from the Census returns)

1801	.	.	.	.	.	.	.	.	187,000
1811	.	.	.	.	.	.	.	.	228,000
1821	.	.	.	.	.	.	.	.	281,000
1831	.	.	.	.	.	.	.	.	369,000
1841	.	.	.	.	.	.	.	.	497,000
1851	.	.	.	.	.	.	.	.	637,000
1861	.	.	.	.	.	.	.	.	819,000

PERCENTAGE INCREASE DURING EACH INTER-CENSAL PERIOD

1801-1811	.	.	.	.	.	.	.	.	21'5
1811-1821	.	.	.	.	.	.	.	.	23'4
1821-1831	.	.	.	.	.	.	.	.	31'4
1831-1841	.	.	.	.	.	.	.	.	34'6
1841-1851	.	.	.	.	.	.	.	.	28'0
1851-1861	.	.	.	.	.	.	.	.	28'7

TABLE II

POPULATION OF BIRMINGHAM AND DISTRICT IN 1861

PARISHES AND TOWNSHIPS

	<i>Parishes</i>							
Kingswinford	.	.	.	34,257	Birmingham	.	.	212,621
Sedgeley	.	.	.	36,637	Aston	.	.	94,995
Walsall (part of)	.	.	.	37,760	Edgbaston	.	.	12,007
Wednesbury	.	.	.	21,968	Sutton Coldfield	.	.	4,662
West Bromwich	.	.	.	41,795	King's Norton	.	.	13,634
Handsworth and Soho	.	.	.	11,459	Northfield	.	.	3,130
Tipton	.	.	.	28,870				
Dudley	.	.	.	44,975	<i>Townships</i>			
Oldswinford	.	.	.	22,958	Wolverhampton	.	.	60,860
Hales Owen	.	.	.	29,293	Wednesfield	.	.	8,553
Rowley Regis	.	.	.	19,785	Willenhall	.	.	17,256
Harborne	.	.	.	16,906	Bilston	.	.	24,364
Darlaston	.	.	.	12,884	Great Barr	.	.	1,075
					Redditch	.	.	5,441
								<u>819,135</u>

TABLE III

POPULATION OF BIRMINGHAM AND DISTRICT, 1861-1921

1861	819,000
1871	948,000
1881	1,106,000
1891 (Coventry included from this year onwards)	1,289,000
1901	1,483,000
1911	1,640,000

1911 (with the additional population falling within the new boundaries of Birmingham)	1,698,000
1921	1,855,000

PERCENTAGE INCREASE DURING EACH INTER-CENSAL PERIOD

1861-1871	15.6
1871-1881	16.6
1881-1891	16.5
1891-1901	15.0
1901-1911	10.7

1901-1911 (with the additional population falling within the new boundaries of Birmingham included for 1911)	14.6
1911-1921	9.2

TABLE IV

POPULATION OF CERTAIN PARISHES AND TOWNSHIPS, 1861-1891

The object of this Table is to illustrate the effects of the great depression on the population of certain towns and districts within the area. The first group includes townships and parishes in which the population either declined or increased very slightly between 1871 and 1881. The second group consists of places the population of which increased between 1871 and 1881, but fell during the following decade.

	1861	1871	1881	1891
(1)				
Bilston (township)	24,364	24,188	22,730	23,453
Sedgeley (parish)	36,637	37,355	36,574	36,860
Wednesbury (parish)	21,968	25,030	24,566	25,347
Darlaston (parish)	12,884	14,416	13,563	14,422
Willenhall (township)	17,256	18,146	18,461	19,366
Kingswinford (parish)	34,257	35,041	35,767	36,411
(2)				
Tipton (parish)	28,870	29,445	30,013	29,314
Dudley (parish)	44,975	43,782	46,233	45,724
Stourbridge (township)	8,783	9,376	9,757	9,386

TABLE V

NUMBERS ENGAGED IN CERTAIN INDUSTRIES ACCORDING TO THE CENSUS RETURNS, 1861-1911

The figures cover the employment in Warwickshire, Staffordshire and Worcestershire, except when otherwise stated.

Industry	1861	1871	1881	1891	1901	1911
Brass, copper, etc.	10,700	11,700	19,300	28,700	30,100	32,000
Small-arms	8,400	8,500	5,400	5,800	5,300	4,100
Jewellery and plate (Warwickshire only)	6,800	9,600	14,600	..	16,000	18,400
Button	5,600	5,300	5,500	4,400	3,700	4,800
Pen (Warwickshire only)	1,300	1,500	2,600	3,100	3,800	3,700
Nail	19,300	17,700	14,800	7,900	4,200	3,200
Glass	4,500	5,500	5,000	5,100	4,900	5,100
Saddlery, harness, whip	3,600	5,800	6,300	8,700	10,900	8,900
Tanning and currying	1,500	1,600	1,700	..	..	..
Leather-goods (bags, etc.)	..	400	800	3,200	4,900	2,100
Lock (Staffordshire only)	3,700	5,200	6,200	6,600	5,100	4,700
Needle (Warwickshire and Worcestershire)	3,500	4,300	3,900	3,300	..	..
Pin (Warwickshire only)	200	300	400	500	3,900	4,200
Tinplate-ware	2,600	3,400	4,800	5,600	6,400	6,000
Screw	1,500	1,400	..	5,300	6,700	8,100
Nut, bolt, rivet	..	..	..	..	8,100	12,600
Wire-drawing, weaving, etc.	1,500	2,000	2,100	2,300	3,000	4,000
Brush and broom	1,300	1,400	1,600	1,900	1,900	2,100
Watch and clock (Warwickshire only)	3,500	4,200	5,000	5,000	3,800	2,300
Umbrella and stick	700	600	1,100	900	900	800
Chemical	500	500	600	1,000	1,800	2,600
Paper, stationery, box-making	..	2,200	3,300	5,400	5,900	6,600
Weighing and testing machine	..	700	1,000	1,400	1,600	3,100
Railway carriage and wagon	..	..	1,300	..	3,200	6,100
Electrical-apparatus	..	..	100	700	3,500	9,100
Chain and anchor	3,100	3,800	4,000	5,400	5,800	6,600
Cycle	..	..	1,700	8,300	..	..
Motor	..	..	..	..	17,700	22,500
India-rubber and gutta-percha goods (Warwickshire only)	..	300	500	500	1,700	3,400
Cocoa and chocolate (Warwickshire and Worcestershire)	..	..	..	..	2,000	3,800

NOTE.—Conclusions concerning the development or decline of industries during the period covered by this history have been based on evidence obtained from sources other than the Census. Apart from the fact that an industry may increase or decrease in magnitude without any corresponding change being shown in the returns for that industry in successive Census reports, accurate comparisons are impossible because of differences in the methods of compilation from Census to Census. Thus, up to 1871, persons described as retired from any stated occupation were classed with that occupation, while from 1881 they were classified as unoccupied. Further, up to 1881 certain types of workers—

TABLE VI
NUMBERS ENGAGED IN CERTAIN INDUSTRIES ACCORD-
ING TO THE CENSUS RETURNS, 1911-1921

Industry	Warwickshire, Worcestershire and Staffordshire		Birmingham and District
	1911	1921	1921
Watch and clock (Warwickshire only)	2,300	30,100	2,500
Jewellery and plate (Warwickshire only)	18,400		
Brass, copper, etc.	32,000	40,100	37,700
Small-arms	4,100	3,200	3,200
Button	4,800	3,800	3,800
Nail	3,200	2,200	2,000
Chain and anchor	6,600	5,900	5,700
Glass	5,100	6,600	5,400
Tanning and currying	2,100	2,200	1,400
Leather-goods (bags, etc.)	4,700	7,400	4,500
Saddlery, harness, whips	8,900		
Lock (Staffordshire)	5,600	6,200	6,500
Needle ¹ (Warwickshire and Wor- cestershire)	4,200	5,900	3,200
Pin (Warwickshire only)			1,300
Nut, bolt, screw and rivet	12,600	18,300	18,200
Wire-drawing, weaving, etc.	4,000	2,300	2,300
Paper, stationery, box-making	6,600	5,800	4,100
Brush and broom	2,100	1,700	1,400
Weighing and testing machine	3,100	5,300	4,800
Railway carriage and wagon	6,100	11,600	10,600
Electrical apparatus (excluding electricians)	9,100	25,800	16,400

e.g. clerks, porters and engine-drivers—had been classed with the trade with which their work was connected, but in the Census of that year and in the two succeeding Censuses they were collected under their occupational headings only. In other words, for the Censuses of 1861 and 1871 the industrial classification was more closely followed than it was between 1881 and 1901; while in 1911 figures showing the industrial classification were again available. For the local trades, however, the most serious factor which has affected comparability has consisted of changes in the definition and in the grouping of the various trades and occupations. Thus in some Censuses locksmiths have been grouped with bellhangers; in others a separate figure for the former has been given. Sometimes the figure for a certain trade has included both dealers and makers; in succeeding Census reports the makers have been shown separately. These changes have in some trades seriously reduced the value of comparison between different Censuses; and the Census figures quoted in the text and in these Tables must be regarded as affording only a general indication of alterations in the numbers engaged in each industry during our period, and as additional evidence in support of conclusions based mainly on material drawn from other sources (*cf. Census of England and Wales, 1911, vol. x., part i., p. v. et seq.*).

¹ Covers fishhook manufacture in 1921.

TABLE VI.—*continued*

NUMBERS ENGAGED IN CERTAIN INDUSTRIES ACCORDING TO THE CENSUS RETURNS, 1911-1921

Industry	Warwickshire, Worcestershire and Staffordshire		Birmingham and District ¹
	1911	1921	1921
Cycle	22,500	67,700	64,800
Motor	16,800		
Other vehicles and motor and cycle accessories . . . . .	..	17,600	(Accessories only) 14,900
Cocoa and chocolate (Warwickshire and Worcestershire)	3,800	..	8,500
Chemical	2,600	4,700	4,100
India-rubber and gutta-percha (Warwickshire)	3,400	11,500	11,500
Maltings, breweries and mineral waters . . . . .	..	..	5,700
Metal bedsteads and wire mattresses	5,600	3,900	3,900
Tubes, iron and steel	7,300	16,800	16,700
Cutlery and small tools . . . . .	..	11,200	10,400
Boilers and tanks	3,100	3,700	3,500
Stove, grate, range, fire-iron	3,600	2,400	2,000 ²
Safes . . . . .	..	..	1,000
Constructional engineering . . . . .	..	4,400	4,200
Harness, furniture and cart gear . . . . .	..	..	2,900
Hollow-ware, iron and steel . . . . .	..	9,800	9,100
Pig-iron (blast-furnaces) . . . . .	..	..	1,800
Puddling furnaces and iron-rolling mills . . . . .	..	..	10,700
Steelworks and steel-rolling mills . . . . .	..	..	7,400
Ironworks (other branches) . . . . .	..	..	1,200
General iron foundries . . . . .	..	..	14,500
Steel foundries . . . . .	..	..	600
Forging (not chains and anchors) . . . . .	..	..	4,600
Machine tools . . . . .	..	..	4,100
Steam locomotives and railway plant . . . . .	..	..	1,400
Stationary engines and power transmission . . . . .	..	..	3,700

¹ For the Census definition of Birmingham and District see page 5.
² Excluding fire-iron trade for 1921.

APPENDICES

TABLE VII

MINERAL OUTPUT OF SOUTH STAFFORDSHIRE AND WORCESTERSHIRE

The figures in this Table cover the whole of South Staffordshire, including the district north of the Great Bentley Fault, and so, as far as the coal production is concerned, they differ materially from the estimates of the Black Country's output which are given on page 281.

<i>Year</i>	<i>Coal Output</i> (in million tons)	<i>Iron Ore Output</i> (in thousand tons)	<i>Number of Miners</i>
1855 . . .	7'3	..	..
1858 . . .	5'0	959	..
1860 . . .	5'3	786	..
1865 . . .	10'2	660	27,000
1870 . . .	9'4	450	29,000
1872 . . .	10'6	642	32,000
1876 . . .	10'0	590	33,000
1882 . . .	10'1	177	27,000
1884 . . .	9'7	117	24,000
1887 . . .	9'0	110	22,000
1890 . . .	9'8	53	25,000
1892 . . .	10'0	64	..
1897 . . .	9'3	42	26,000
1900 . . .	9'4	51	29,000
1913 . . .	9'5	32	30,000

TABLE VIII

PRODUCTION OF PIG-IRON IN SOUTH STAFFORDSHIRE AND WORCESTERSHIRE

<i>Year</i>	<i>Output</i> (in thousand tons)	<i>Year</i>	<i>Output</i> (in thousand tons)	<i>Year</i>	<i>Output</i> (in thousand tons)
1806 . . .	50	1873 . . .	673	1894 . . .	333
1830 . . .	213	1874 . . .	452	1895 . . .	265
1839 . . .	339	1875 . . .	471	1896 . . .	308
1854 . . .	743	1876 . . .	466	1897 . . .	400
1855 . . .	754	1877 . . .	428	1898 . . .	406
1856 . . .	777	1878 . . .	393	1899 . . .	415
1857 . . .	657	1879 . . .	326	1900 . . .	398
1858 . . .	598	1880 . . .	385	1901 . . .	341
1859 . . .	475	1881 . . .	374	1902 . . .	380
1860 . . .	470	1882 . . .	398	1903 . . .	397
1861 . . .	396	1883 . . .	430	1904 . . .	394
1862 . . .	410	1884 . . .	357	1905 . . .	430
1863 . . .	691	1885 . . .	344	1906 . . .	452
1864 . . .	629	1886 . . .	294	1907 . . .	470
1865 . . .	693	1887 . . .	293	1908 . . .	449
1866 . . .	533	1888 . . .	366	1909 . . .	482
1867 . . .	516	1889 . . .	373	1910 . . .	495
1868 . . .	532	1890 . . .	327	1911 . . .	473
1869 . . .	570	1891 . . .	350	1912 . . .	442
1870 . . .	589	1892 . . .	338	1913 . . .	467
1871 . . .	726	1893 . . .	330	1914 . . .	420
1872 . . .	673				

APPENDIX B

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THE most valuable part of the material for this book, as I have explained elsewhere, was obtained by personal inquiry from local firms or from their private histories and catalogues. A good deal of information, however, was gathered from official reports, newspaper articles, and printed records of various kinds, and the more important of these sources are included in this bibliography. The Birmingham Collection in the Birmingham Public Reference Library contains the major part of these works; others were consulted in the public libraries of Wolverhampton and Coventry; while a few were lent by local firms and by private individuals.

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