

THE
ECONOMIC HISTORY
OF ENGLAND
(1760-1860)

Arthur Redford

THE ECONOMIC HISTORY OF GREAT BRITAIN

Edited by J. F. REES

*Principal of the University College of South Wales and
Monmouthshire*

**THE ECONOMIC HISTORY OF
ENGLAND**

(1760-1860)

LONGMANS, GREEN AND CO. LTD.

**39 PATERNOSTER ROW, LONDON, E.C.4
6 OLD COURT HOUSE STREET, CALCUTTA
53 NICOL ROAD, BOMBAY
36A MOUNT ROAD, MADRAS**

LONGMANS, GREEN AND CO.

**55 FIFTH AVENUE, NEW YORK
221 EAST 20TH STREET, CHICAGO
88 TREMONT STREET, BOSTON
128-132 UNIVERSITY AVENUE, TORONTO**

The Economic History of England (1760-1860)

BY

ARTHUR REDFORD

M.A., Ph.D.

Reader in Economic History in the University of Manchester

LONGMANS, GREEN AND CO.
LONDON • NEW YORK • TORONTO

1931

Made in Great Britain

EDITOR'S INTRODUCTORY NOTE

ECONOMIC HISTORY has suffered from the premature generalisations of popular text-books. Within the last twenty years or so there has been a steady progress in correcting these generalisations. It has been an age of monographs. The time has now arrived to attempt to incorporate the new conclusions in a continuous account of economic development. But the task is becoming too formidable for an individual author. In this series an experiment is made with the method of entrusting periods to different writers. The aim is to give an account which will appeal to the general reader, as well as to the academic student.

There is now a virtual consensus of opinion about the scope of economic history. It includes a study of the state of agriculture, industry, commerce, and transport, together with an elucidation of the more technical problems of currency, credit, and taxation. These subjects necessarily involve an examination and description of social conditions. In fact the line between the *economic* and the *social* cannot be strictly drawn. No attempt is here made to separate them. Division into departments is even more vicious in History than in Science. Economic History can never be a self-contained account of man's activities for the private use of economists. It is a way of approaching the vast material of history and provides a narrative which is complementary to that of the political historian. There is, indeed, no very definite line of demarcation. Earlier writers, such as Thorold Rogers, incorporated much political history with their economic: recent political historians have shown a tendency to pay increasing attention to economic factors.

J. F. REES.

PREFACE

A short book does not need a long preface. In seventy thousand words I have tried to tell the plain truth about the most controversial century in the economic history of England ; and in doing this I have tried to avoid controversy. In its main outlines the book is based on monographs and other authoritative works published within the last ten years ; but on many points of detail I have ventured to supplement (and in some cases to correct) my secondary authorities by independent reference to original sources. To acknowledge all my debts to other writers by means of footnotes would be impracticable, and is perhaps not called for in a work of this size ; I hope that the list of books on pp. 209 ff. will be accepted as a partial compensation for the lack of more detailed references.

Several of my academic colleagues have assisted me by reading the book during its progress through the press. Professor G. W. Daniels read the proofs, and gave me sympathetic encouragement mingled with kindly criticism. Mr. T. S. Ashton corrected some serious errors in the chapters on financial subjects. Mr. H. L. Beales, of the London School of Economics, pointed out several weak points in my treatment of social questions. Principal J. F. Rees has not only given skilful editorial help at every stage of my work, but has shown a keen personal interest in discussing the economic problems of the period. My wife has shown unwearying patience in detecting ambiguities and verbal errors. Finally, I must thank the University of Birmingham for inviting me to examine an early draft of Mr. E. Roll's important book on the history of the firm of Boulton and Watt ; and I am especially grateful to Mr. A. P. Wadsworth and Miss Julia Mann for allowing me to read in typescript their monumental work on the early development of the Lancashire textile industries.

ARTHUR REDFORD.

MANCHESTER, *August* 1931.

CONTENTS

PART I

THE GROWTH OF INDUSTRIALISM, 1760-1815

CHAPTER	PAGE
✓ I. THE GENESIS OF MODERN INDUSTRY	3
II. CHANGES IN THE TEXTILE INDUSTRIES	12
III. CHANGES IN THE IRON, COAL, AND ENGINEERING INDUSTRIES	24
IV. THE INDUSTRIAL CAPITALISTS	39
V. THE INDUSTRIAL WAGE EARNERS	52
1/2 VI. CHANGES IN AGRICULTURE	66
VII. THE ECONOMIC EFFECTS OF THE FRENCH WARS	78

PART II

THE AGE OF REFORMS, 1815-1860

VIII. AGRARIAN DISTRESS AND POOR-LAW REFORM	97
✓ IX. INDUSTRIAL AND COMMERCIAL PROGRESS	111
X. LABOUR ORGANISATION AND CO-OPERATION	125
XI. LABOUR LEGISLATION AND SOCIAL REFORM	139
XII. CURRENCY, BANKING, AND JOINT-STOCK REFORMS	155
XIII. FISCAL POLICY AND TARIFF REFORM	170
XIV. THE DEVELOPMENT OF TRANSPORT	186
XV. THE AGE OF NEW GOLD	200
LIST OF BOOKS FOR FURTHER READING AND REFERENCE	209
INDEX	217

LIST OF BOOKS FOR FURTHER READING AND REFERENCE

IN making this short list I have given special preference to the books which I have found most useful in my own work ; thus the list may partially atone for the scarcity of foot-notes in the preceding pages. The books are arranged, in each section, according to their dates of publication.

A.—BIBLIOGRAPHIES

- Judith B. Williams, *A Guide to the Printed Materials for English Social and Economic History, 1750-1850* (2 vols., 1926).
- H. L. Beales and G. D. H. Cole, *A Select List of Books on Economic and Social History, 1700-1850* (1927).
- Eileen Power, *The Industrial Revolution, 1750-1850: A Select Bibliography* (1927).

B.—GENERAL WORKS

- Arnold Toynbee, *The Industrial Revolution of the Eighteenth Century in England* (1884).
- A. V. Dicey, *Law and Opinion in England during the Nineteenth Century* (1905).
- P. Mantoux, *The Industrial Revolution in the Eighteenth Century* (1906, translated 1928).
- A. E. Bland, P. A. Brown, and R. H. Tawney, *English Economic History Select Documents, Part III* (1914).
- L. C. A. Knowles, *The Industrial and Commercial Revolutions in Great Britain during the Nineteenth Century* (1921).

210 THE ECONOMIC HISTORY OF ENGLAND

- J. H. Clapham, *An Economic History of Modern Britain*:
Vol. I, *The Early Railway Age, 1820-1850* (1926).
C. R. Fay, *Great Britain from Adam Smith to the Present
Day* (1928).

C.—BOOKS ON SPECIAL SUBJECTS

CHAPTER I.—THE GENESIS OF MODERN INDUSTRY

- E. A. Pratt; *History of Inland Transportation and Com-
munication in England* (1909).
R. B. Westerfield, *Middlemen in English Business, par-
ticularly between 1660 and 1760* (1915).
H. Heaton, *The Yorkshire Woollen and Worsted Industries
from the Earliest Times up to the Industrial Revolution*
(1920).
Witt Bowden, *Industrial Society in England towards the
End of the Eighteenth Century* (1925).

CHAPTER II.—CHANGES IN THE TEXTILE INDUSTRIES

- G. B. Hurst, "The English Silk Industry in the Eighteenth
Century" (*English Historical Review*, Vol. XXIV,
1909).
J. L. and B. Hammond, *The Skilled Labourer, 1760-1832*
(1920), especially Chapter VI, on the woollen and
worsted industries.
G. W. Daniels, *The Early English Cotton Industry* (1920).
G. Unwin (and others), *Samuel Oldknow and the Arkwrights*
(1924).
W. B. Crump (ed.), *The Leeds Woollen Industry, 1780-1820*
(1931).
A. P. Wadsworth and J. de L. Mann, *The Cotton Trade and*

LIST OF BOOKS FOR FURTHER READING 211

CHAPTER III.—CHANGES IN THE IRON, COAL, AND ENGINEERING INDUSTRIES

- G. I. H. Lloyd, *The Cullery Trades* (1913).
J. Lord, *Capital and Steam Power, 1750-1800* (1923).
T. S. Ashton, *Iron and Steel in the Industrial Revolution*
(1924).
H. W. Dickinson and R. Jenkins, *James Watt and the Steam
Engine* (1927).
T. S. Ashton and J. Sykes, *The Coal Industry of the
Eighteenth Century* (1929).
E. Roll, *An Early Experiment in Industrial Organisation :
being a history of the firm of Boulton and Watt* (1930).

CHAPTER IV.—THE INDUSTRIAL CAPITALISTS

- S. Smiles, *Lives of the Engineers* (3 vols., 1861-62); *Industrial
Biography* (1863); *Lives of Boulton and Watt* (1865).
E. Meteyard, *Life of Josiah Wedgwood* (1865).
E. Helm, *Chapters in the History of the Manchester Chamber
of Commerce* (1902).
G. H. Wright, *Chronicles of the Birmingham Chamber of
Commerce* (1913).
H. Hamilton, *The English Brass and Copper Industries to
1800* (1926), especially Chapters VI-VIII.
See also the works mentioned under Chapters II and III
above.

CHAPTER V.—THE INDUSTRIAL WAGE EARNERS

- S. and B. Webb, *History of Trade Unionism* (1894: new
edition, 1920).
M. D. George, *London Life in the Eighteenth Century* (1925).
G. T. Griffith, *Population Problems of the Age of Malthus*
(1926).

212 THE ECONOMIC HISTORY OF ENGLAND

- M. C. Buer, *Health, Wealth, and Population in the Early Days of the Industrial Revolution* (1926).
A. Redford, *Labour Migration in England, 1800-1850* (1926).
Dorothy Marshall, *The English Poor in the Eighteenth Century* (1926).

CHAPTER VI.—CHANGES IN AGRICULTURE

- G. Slater, *The English Peasantry and the Enclosure of the Common Fields* (1909).
A. H. Johnson, *The Disappearance of the Small Landowner* (1909).
W. H. R. Curtler, *A Short History of English Agriculture* (1909).
J. L. and B. Hammond, *The Village Labourer, 1760-1832* (1911).
Lord Ernle, *English Farming, Past and Present* (1912).
E. C. K. Gonner, *Common Land and Enclosure* (1912).
W. H. R. Curtler, *The Enclosure and Redistribution of our Land* (1920).

CHAPTER VII.—THE ECONOMIC EFFECTS OF THE
FRENCH WARS

- T. Tooke, *History of Prices: Vol. I* (1838).
S. Dowell, *History of Taxation and Taxes in England* (4 vols., 1884).
J. Holland Rose, *Napoleonic Studies* (1904), especially the essays on "Napoleon and British Commerce" and "Britain's Food Supply in the Napoleonic War."
A. Cunningham, *British Credit in the last Napoleonic War* (1910).
E. Cannan, *The Paper Pound of 1797 to 1821* (1919).

LIST OF BOOKS FOR FURTHER READING 213

CHAPTER VIII.—AGRARIAN DISTRESS AND POOR-LAW REFORM

- W. Cobbett, *Rural Rides* (1830: cheap edition in Everyman's Library, 2 vols., from the edition of 1853).
Poor Law Commissioners' Report, 1834 (reprinted 1905, Cd. 2728).
Sir G. Nicholls, *History of the English Poor Law*: Vol. II (1854).
T. Mackay, *History of the English Poor Law*: Vol. III (1899).
S. and B. Webb, *English Local Government: English Poor Law History*: Part I: *The Old Poor Law* (1927). Part II: *The Last Hundred Years* (2 vols., 1929).
See also the works mentioned under Chapter VI.

CHAPTER IX.—INDUSTRIAL AND COMMERCIAL PROGRESS

- G. R. Porter, *The Progress of the Nation* (3 vols., 1836-43).
N. J. Silberling, *British Prices and Business Cycles, 1779-1850* (*Review of Economic Statistics*, 1923).
Clive Day, *The Distribution of Industrial Occupations in England, 1841-1861* (1927).
G. C. Allen, *The Industrial Development of Birmingham and the Black Country* (1929).
H. D. Fong, *Triumph of Factory System in England* (1930).
See especially J. H. Clapham, *op. cit.*, Chapters V, VI, X, and XII.

CHAPTER X.—LABOUR ORGANISATION AND CO-OPERATION

- G. J. Holyoake, *History of Co-operation* (2 vols., 1875-79).
B. Potter, *The Co-operative Movement* (1891).
S. and B. Webb, *History of Trade Unionism* (1894: new edition, 1920).
Graham Wallas, *Life of Francis Place* (1898: second edition, 1918).

M. Hovell, *The Chartist Movement* (1918).

M. Beer, *A History of British Socialism* (2 vols., 1919-20).

G. D. H. Cole, *Robert Owen* (1925).

CHAPTER XI.—LABOUR LEGISLATION AND SOCIAL REFORM

E. Hodder, *Life and Work of the Seventh Earl of Shaftesbury* (3 vols., 1886).

B. L. Hutchins, *The Public Health Agitation, 1833-1848* (1909).

B. L. Hutchins and A. Harrison, *History of Factory Legislation* (1911).

J. L. and B. Hammond, *The Town Labourer, 1760-1832* (1917), especially Chapters VIII and IX; *Lord Shaftesbury* (1923); *The Age of the Chartists* (1930).

CHAPTER XII.—CURRENCY, BANKING, AND JOINT-STOCK REFORMS

C. Conant, *History of Modern Banks of Issue* (1896).

A. Andréades, *History of the Bank of England* (1909).

R. R. Formoy, *Historical Foundations of Modern Company Law* (1923).

J. Sykes, *The Amalgamation Movement in English Banking* (1926).

T. E. Gregory, *Introduction to Tooke and Newmarch's History of Prices* (1928); *Select Statutes, Documents, and Reports relating to British Banking* (1929), especially the introduction.

See also N. J. Silberling, *op. cit.*

CHAPTER XIII.—FISCAL POLICY AND TARIFF REFORM

S. Buxton, *Finance and Politics, 1783-1885* (2 vols., 1888).

C. S. Parker, *Sir Robert Peel* (3 vols., 1892-99).

LIST OF BOOKS FOR FURTHER READING 215

J. Morley, *Life of Gladstone* (1903).

J. F. Rees, *A Short Fiscal and Financial History of England, 1815-1918* (1921).

See also T. Tooke, *op. cit.*, and S. Dowell, *op. cit.*

CHAPTER XIV.—THE DEVELOPMENT OF TRANSPORT

W. S. Lindsay, *History of Merchant Shipping* (1876).

E. Cleveland Stevens, *English Railways* (1915).

W. T. Jackman, *Development of Transportation in Modern England* (1916).

H. G. Lewin, *Early British Railways* (1925).

See also J. H. Clapham, *op. cit.*, Chapters III, IX, and XII ;

L. C. A. Knowles, *op. cit.*, Part V ; and C. R. Fay, *op. cit.*, Part II.

CHAPTER XV.—THE AGE OF NEW GOLD

See especially Tooke and Newmarch, *History of Prices*, Vol. VI (1857), and W. T. Layton, *Introduction to the Study of Prices* (1912). With J. S. Mill, *Principles of Political Economy* (1848), Book IV, Chapter VII, "On the Probable Futurity of the Labouring Classes," compare Arnold Toynbee, *op. cit.*, Chapter XIV, on "The Future of the Working Classes."

INDEX

- Agriculture, 3-4, 9, 19, 25, 43-4, 55, 60-3; Chap. VI, *passim*; 78, 81, 84-6, 97-104, 108-10, 115, 129-30, 145, 172-3, 178-82, 200-1, 205, 207
 America (U.S.A.), 80-3, 91, 119-23, 130-1, 158, 168, 180, 197-203, 206; see also North America
 Anti-Corn-Law League, 135, 149, 174-5, 178-82
 Apprenticeship, 3, 53-6, 87-8, 137, 139-40, 146-7
 Arkwright, Richard, 16-8, 39-40, 43, 45, 54 n
 Ashley (Lord), 144-50, 153-4
 Attwood, Thomas, 133, 159
 Australia, 70, 118, 199, 202

 Bakewell, Robert, 4, 69-70
 Banking, 8-9, 40, 45, 88-92, 120-4, 155-65, 167-9, 182, 190, 202, 208; Bank of England, 88-92, 121, 155-65, 172, 202
 Bentham, Jeremy, 106
 Birmingham, 4, 15, 26, 28, 36, 41-2, 48-51, 132, 134, 159, 186-92, 203
 Bleaching, 22, 47
 Blockades and Embargoes, 78-83, 207
 Boulton, Matthew, 4, 36-8, 42-5
 Brewing and Distilling, 29, 38, 50; see also Wines and Spirits
 Bridgewater (Duke of), 11, 30
 Bright, John, 174, 179
 Brindley, James, 4, 11
 Brunel, I. K., 191

 Calico-printing, 22-3, 47, 149
 Canals, 4, 10-11, 31, 34, 38, 41, 186-9, 192-3, 197
 Capital and Capitalism, 3-8, 25-6, 29-30, 38 n; Chap. IV, *passim*; 52, 55, 66, 71-5, 97, 99, 138; Chap. XII, *passim*; 188-9, 191, 194, 201, 204, 207-8
 Carding, 6, 14, 16, 18, 21, 40, 112
 Cartwright, Edmund, 20-1, 43, 112
 Chadwick, Edwin, 106, 108, 152, 154
 Chartism, 45 n, 109, 132-7, 179, 206
 Children's Employment, 12, 15-6, 33, 56-8, 62, 139-50
 China, 7, 14, 120, 174
 Clapham, J. H., 12 n, 64-5, 115 n, 199 n
 Coal Industry, 10-13; Chap. III, *passim*; 41, 50, 113-6, 136, 146-8, 177, 185-6, 198, 206
 Cobbett, William, 101
 Cobden, Richard, 174, 177, 179-80, 185
 Coke, T. W., 72
 Colonial Policy, 173, 177, 180-3, 197
 Combination Acts, 8, 46, 52-5, 86-8, 125-6, 129, 141
 Commerce, Chambers of, 47, 49-51, 179
 Commercial Policy, 78-81, 98; Chap. XIII, *passim*; 207
 Commercial Treaties, 49-50, 177, 184-5, 204
 Continental System, 79-82
 Co-operative Movement, 130-8, 205, 208

- Copper and Brass Industries, 27, 33, 37-8, 41, 44, 47-9, 116-7
- Corn (grain), 62, 66, 68-9, 72, 76-7, 85, 97-8, 100, 118, 178-82, 200-1
- Corn Laws, 98, 118, 149, 170-5, 178-82, 200
- Corn Milling, 13-14, 115
- Cort, Henry, 28, 43
- Cotton Industry and Trade, 5, 7, 12-22, 37-40, 43, 47, 49, 54, 58, 60-1, 82-4, 88, 111-2, 115-21, 127-8, 136, 139-42, 173, 181, 200, 203, 206
- Cranage, Thomas and George, 28
- Credit System, 8, 42, 45, 88-92, 120-4, 155-65, 177, 203-4; see also Banking, and Finance
- Crompton, Samuel, 17-8, 43, 46
- Currency, 55, 57, 62 n, 89-92, 99-100, 120, 123, 130-3, 155-65, 202-4
- Cutlery, 26, 30, 47
- Dale, David, 18, 43, 56
- Darby's of Coalbrookdale, 26-30, 34, 36, 40-1, 44, 46
- Davy, Sir Humphry, 32
- Debt, National, 89-93, 171, 177, 182
- Derby and Derbyshire, 10, 13, 40, 46, 66, 127, 190-1
- Disraeli, Benjamin, 180, 208
- Distress, Social, 55, 57, 61-2, 78, 93; Chap. VIII, *passim*; 112, 122-3, 135, 183, 207-8
- Doherty, John, 127-8
- Domestic Industry, 6-8, 12, 15-6, 18, 26, 40, 43-4, 56, 60-1, 74, 112, 139-40, 207
- Drainage, Land, 67, 115, 182, 201; Mines, 30-1; Towns, 58, 151-3, and see also Sanitation
- Dyeing, 22-3, 47
- Eden, William (later Lord Auckland), 49
- Elliott, Ebenezer, 133
- Emigration, 126, 137, 202-4
- Employers' Organisations, 39, 46-51, 86, 125-6
- Enclosures, 9, 66-77, 85; see also Agriculture
- Engineering, Chap. III, *passim*; 42-5, 114, 136
- Excise Duties, 49-50, 177-8, 204
- Export Trade, 6, 12, 14, 19, 47-8, 62, 66, 70, 79-85, 98, 113, 116-21, 171, 174-7, 180, 185, 200, 202, 207
- Factories and Factory System, 4, 7-8, 12-22, 26, 40-4, 54-62, 74, 87, 111-2, 116-7, 122, 139-46, 148-50, 207-8
- Factory Legislation, 58 n, 133, 137, 139-50, 182, 205, 208
- Fields of Todmorden, Joshua, 39, 43; John, 150
- Finance, 5, 8-9, 39, 84, 88-93, 105, 110, 120-4, 127, 141, 155-65, 183, 190-1, 201-2; see also Banking
- Finance, Public, 49, 88-93, 105, 110, 149; Chap. XIII, *passim*; see also Debt, National, and Taxation
- Fluctuations, Commercial and Industrial, 78-84, 97, 109, 117-24, 127, 132, 155-63, 167-8, 178-9, 182-3, 188-92, 196, 202
- Fly Shuttle, 14-5, 20-1, 111
- Food Supply, 61-2, 66, 68, 76, 85, 98, 100, 121, 207
- Framework Knitting, 7, 139
- France, 5, 37, 41, 45, 49-50, 75; Chap. VII, *passim*; 119, 130, 168, 177, 184-5, 198, 202, 204, 207
- Free Trade Movement, 49-50, 79, 134-5; Chap. XIII, *passim*; 200-1, 205, 207-8
- Friendly Societies, 8, 54, 137
- Fustian Industry, 7, 47, 49
- Germany, 5, 14-5, 19, 37, 41, 45, 70, 80, 89, 118-20, 203
- Gladstone, W. E., 146, 172, 176-7, 183-5, 193-4
- Glasgow, 22, 34, 49, 115
- Glass Manufacture, 30, 50, 177-8

- Gold Standard, 89-92, 120, 155-62, 202-4
- Hammond, J. L. and B., 65 n, 87 n, 208 n
- Hand-loom Weavers, 61, 88, 112, 117, 133; see also Weaving
- Hargreaves, James, 16-7, 43
- Health, Public, 58-60, 63-4, 150-4, 208
- Holland, 5, 19, 45, 80, 173, 197
- Horrocks, John (of Preston), 43
- Horrocks (of Stockport), 20
- Hours of Labour, 53, 58, 60, 126, 139-50, 200, 205
- Housing, 58-9, 97, 205
- Hudson, George, 190-1
- Hume, Joseph, 125-6
- Huntsman, Benjamin, 44
- Huskisson, William, 126, 172, 177, 197
- Import Trade, 62, 79-80, 83-5, 98, 118-9, 170, 173, 175-8, 180-5, 203
- Income Tax, 92-3, 149, 170-1, 176-7, 183-4
- India, 7, 17, 84, 120, 199
- Industrial Revolution, 3-4, 7 n, 12, 20 n, 26 n, 62, 63 n, 65 n, 206
- Inventions and Patents, 3-4, 14-29, 32-44, 52, 57, 111-3, 187, 201, 203; see also Machinery
- Ireland, 49, 58-9, 85, 90, 118-9, 123, 168, 180, 188, 197-8
- Iron and Steel Industries, 4, 7-8; Chap. III, *passim*; 40-2, 44, 46, 49-50, 84, 113-7, 136, 185, 187, 198-200
- Jenny (Spinning), 16-8, 21, 43, 111
- Joint-stock Organisation, 88-9, 123, 156-7, 161-9, 182, 208
- Kay, John, 14-5, 20
- Labour Organisation, 8, 39, 44-5, 51; Chap. V, *passim*; 86-8; Chap. X, *passim*; 205-6
- Lancashire, 7, 10, 14, 17, 20-3, 37-9, 47, 53-4, 63, 66, 75, 83, 111, 115-6, 127-8, 137-9, 143, 147, 186, 203, 206
- Lead Mining, 27, 117
- Linen Industry, 7, 15, 20, 22, 43, 47, 117-8, 181, 185
- Liverpool, 10-11, 187, 189, 191, 199
- Living Conditions, 58-9, 140, 150; see also Housing
- Localisation, Industrial, 25-6, 111, 115-6
- Lombe, Sir Thomas, 13, 17, 40
- London, 7, 10, 13, 23, 41, 46, 49-50, 53, 55, 59, 66, 72, 87, 113, 132-3, 141, 143, 151-2, 155, 165, 172, 188-92, 198-9
- Lovett, William, 133-5
- Loyd, S. J. (later Lord Overstone), 160
- Luddite Riots, 87
- McAdam, J. L., 187
- McCulloch, J. R., 125
- Machinery, 3-8, 12-25, 28-9, 40-2, 54-9, 62, 70, 72, 87, 111-8, 140, 145, 201; Export of Machinery, 47, 126, 185
- Manchester, 4, 10-4, 18, 20, 22, 47, 49, 51, 54, 58-9, 106, 111, 115, 122, 127-8, 134, 179, 187, 189, 191
- Mantoux, Paul, 20 n, 33 n, 44 n, 46 n
- Maudsley, Henry, 114
- Metal Industries, 8, 11, 13; Chap. III, *passim*; 40-8, 84, 113, 116, 118, 181, 204; see also Iron and Steel, Copper and Brass
- Migration, Labour, 56 n, 58, 76, 77 n, 101, 150-1, 207
- Mining Industries, 8, 11, 13; Chap. III, *passim*; 97, 113-7, 146-8, 182, 202-4; see also Coal Industry, Lead Mining
- Monopolistic Combinations, 48-9, 163-5, 189-97
- Mule (Spinning), 17-8, 21, 111
- Municipal Reform, 150, 153, 208

- Nail-making, 26, 28-30, 44, 47
 Napoleon Bonaparte, 46, 50, 80-3
 Nasmyth, James, 113
 Navigation Laws, 172-3, 197, 199, 208
 Neilson, J. B., 113
 Newcomen's Fire Engine, 27, 31, 33-5, 37, 41
 Newspapers and Periodicals, 15, 54, 125, 128, 133, 142, 169
 Nicholls, Sir G., 56, 57 n
 North America, 14, 173, 180, 197-8; see also America (U.S.A.)
 Nottingham, 7, 10, 17, 22, 37-40, 66, 115, 127-8
- Oastler, Richard, 142
 O'Brien, James (Bronterre), 135
 O'Connor, Feargus, 133-5
 Oldknow, Samuel, 39, 54 n, 56
 Onions, Peter, 28
 Open-field System, 59, 67-76; see also Agriculture
 Ordnance and Munitions, 27, 29, 36, 41, 84, 117
 Owen, Robert, 39, 43, 128-33, 136-7, 140-1
- Parliamentary Reform, 47, 132-5, 143, 208
 Paul, Lewis, 15-6
 Peel, Robert, 23, 39, 43
 Peel, Sir Robert (the elder), 140-2
 Peel, Sir Robert (the younger), 145, 149-50, 155-6, 161, 172-83
 Percival, Dr. Thomas, 58
 Pitt, William (the younger), 49-50, 89, 92-3, 170-1
 Place, Francis, 125-6, 127 n, 130
 Poor Laws and Pauperism, 44, 56-7, 59, 60 n, 63, 66, 85, 86 n, 99, 101-10, 133, 135, 139, 151-3, 204-5
 Population and Depopulation, 62-4, 66, 68, 71, 75-7, 99-101, 105, 113, 150-1, 201, 207
- Pottery Industry, 7, 11, 29, 49, 116, 128
 Power Loom, 19-22, 112
 Prices, 46, 49, 57, 61-6, 69, 78, 84-5, 90-1, 97-105, 117, 120-2, 132, 155-6, 159, 174, 178-82, 201-4
- Railways, 11, 29, 33, 113-4, 123, 182, 186-97, 200-1
 Rents, 71-2, 85, 97, 100-1, 201
 Riots and Social Disturbances, 20-1, 55-7, 85-7, 100, 109, 126, 134, 206
 Rivers and River Transport, 10-11, 17, 21, 115, 186-7, 198-9
 Roads and Road Transport, 9-10, 38, 69, 110, 113, 186-9, 197
 Roberts, Richard, 18, 111
 Rochdale Pioneers, 137-8
 Roebuck, John, 22, 36, 44
 Russell (Lord John), 150, 179, 181
 Russia, 45, 82, 84, 119, 158, 202
- Sadler, Michael, 143-4
 Sanitation, 58-9, 150-4, 205, 208
 Savery's Fire Engine, 31-4
 Scotland, 4, 25, 27, 40, 43, 45, 50, 54, 72, 85, 112-3, 138, 140-1, 146, 190, 198, 200
 Shipping and Ship-building, 29, 41, 48, 79-85, 97, 113-4, 126, 173, 192, 197-201
 Silk Industry, 5, 7, 13, 17, 40, 47, 50, 117, 121, 142, 144, 173, 181
 Smeaton, John, 27, 32
 Smith, Adam, 11, 171
 Smith, Dr. Southwood, 151-4
 Smuggling, 79-82, 119
 South America, 7, 120, 123, 173, 203
 Spain, 5, 45, 70, 80, 82, 118, 120, 158
 Speenhamland System, 103-5
 Spinning, 4, 6-7, 13-21, 40, 43, 54, 60-1, 111-2, 115-7, 127-8, 136, 139, 200
 Staffordshire, 7, 11, 33, 37-8, 46, 116, 128, 147

- Steam: engines, 29-38, 41, 43, 45, 111-7; locomotives, 186-8; steamships, 113-5, 192, 198-9
 Stephenson, George, 188, 191
 Stockbreeding, 4-5, 67-72, 75-6, 201
 Strikes and Lock-outs, 87, 125-9, 136-7, 208
 Sugar, 29, 119, 121, 174, 203
 Tariff Problems, 49-50, 78-83, 119-20; Chap. XIII, *passim*; 208
 Taxation, 49-50, 89, 92-3, 98, 119; Chap. XIII, *passim*; 204
 Tea, 119, 183, 203
 Telford, Thomas, 187
 Textile Industries, 5-7, 10; Chap. II, *passim*; 24, 29, 37, 39-40, 43-4, 47, 49, 52-4, 61, 70, 84, 87-8, 111, 115-20, 127-8, 139-46, 148-50, 181, 185; see also Cotton, Woollen, and Worsted
 Timber, 118, 177-8, 181, 198
 Tooke, Thomas, 161-2, 172, 201 n, 202 n
 Towns, Growth and Problems of, 34, 47, 54, 58-9, 63, 116, 150-4, 207-8; see also Sanitation, and Water Supply
 Townshend (Lord), 69
 Toynbee, Arnold, 3-4, 205-6
 Trade Unionism, 8, 46-7, 51-5, 86-7, 126-9, 132-3, 136-7, 205-8
 Transport, 5, 8-10, 30, 33, 85, 98; Chap. XIV, *passim*; 201, 206; see also Canals, Railways, Roads, Rivers, and Shipping
 Tull, Jethro, 69
 Unemployment, 57, 60-1, 65, 75, 77-8, 84, 99, 101-3, 108-9, 112, 122-3, 127, 131-2, 174, 201, 204-5
 Wages and Wages System, 19, 25, 53, 55, 60-6, 84-8, 98-100, 103-4, 107, 109, 117, 121, 125-7, 130-2, 179, 200, 204
 Wales, 25, 27, 40-1, 45-6, 50, 64, 113, 116, 186
 Wars, 19-20, 48-50, 55, 57, 61, 62 n, 64, 68-9, 71-2, 75; Chap. VII, *passim*; 97-101, 103, 105, 112, 114, 117-20, 123, 125, 130, 162, 170-2, 178, 184, 198, 206-8
 Water Frame, 16-8, 40
 Water Power, 4, 13, 15-20, 25, 27, 31-2, 40-2, 111, 113, 115
 Water Supply, 34, 37, 58, 113, 151-3
 Watt, James, 22, 31, 34-8, 41-6
 Weaving, 6, 13-5, 19-22, 40, 43, 50, 53-4, 61, 112, 116, 200
 Webb, S. and B., 55 n, 126 n
 Wedgwood, Josiah, 7, 45, 49
 West Indies, 82, 119, 142, 197, 199
 Wilkinson, John, 30, 36, 40-3, 46
 Williams, Thomas, 48
 Wines and Spirits, 119, 177, 181, 185
 Women's Employment, 12, 15-6, 129, 146-9, 205
 Wool, 5, 47, 69-70, 83, 111, 118, 177
 Woollen and Worsted Industries, 5-7, 10, 12, 15, 21-2, 43, 47, 53, 70, 83, 111-2, 115, 119-20, 128, 142, 181
 Working Conditions, 56, 58-60, 86, 139-50
 Yorkshire, 6, 10, 21, 37-8, 46-7, 59, 63, 66, 83, 109, 115-6, 142-3, 147, 190
 Young, Arthur, 71-2
 Zollverein, German, 119, 197