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MANCHESTER AT WORK

A Survey

"Here is a field open to ability, and sure favour comes to the deserving; and industry is distinguished with due rewards."

Edited by
PROFESSOR HENRY CLAY
and
K. RUSSELL BRADY

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PREFACE

AFTER that memorable trooping of the city's industrial colours—Manchester Civic Week, the committee found that it had made money : there were profits from the entertainments, the sale of handbooks and so forth. A substantial sum, over £3,600, was distributed amongst Manchester Institutions relying for their support upon voluntary contributions, but, when the final accounts were available, there was found still to be a small balance and this has lain at interest until a fitting use might be found for it. It has been apparent for some time that Manchester is very busy stocktaking : measuring its resources and its skill against those of its competitors. We felt, therefore, that it would not be inappropriate to invest our resources in the compilation of a short survey of our present position as a great manufacturing and marketing centre and decided to embark upon a study of the city's industrial position. *Manchester at Work* is the result. We hope the book will commend itself as a becoming pendant to our earlier and more ambitious effort to express something of Manchester's commercial and industrial importance. Without a subsidy of some sort no such survey could be published at a popular price—would never, in all probability, be published at all. Mr. Brady, who as honorary organiser of Civic Week, has already made a notable contribution to the work of interpreting Manchester to the world and to itself, kindly undertook the production of the book and obtained the invaluable co-operation of Professor Clay, an economist whose services Manchester is proud to be able to claim.

Our thanks are due to the Editors, and to the authors of the several sections, for the thoroughness with which they have done their work within the limitations of a small volume. We have also to acknowledge the generous assistance of many who have, from specialised knowledge, given valuable help.

The death of Mr. W. H. Barker, reader in geography to Victoria University, during the work of compilation, was a loss which we deeply regretted. He contributed a valuable section but did not live to revise the proofs of this, his last, work for the city to which he has rendered much service.

The Civic Week Committee takes this opportunity of expressing its appreciation of the confidence reposed in it, and of recording the pleasure it has found in its work.

MILES E. MITCHELL
PERCY WOODHOUSE
WILLIAM C. BACON

August, 1929.

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INTRODUCTION

THE Civic Week Celebrations, of which this volume is an outcome, were an attempt to make Manchester aware of itself. Few communities have a livelier sense of local patriotism ; but the mere size of the city makes it impossible for the citizen, unaided, to take in and realise the scale and variety of the social activities of which it is the scene or centre. If the citizens living in the locality see only a part, still less can people who live in other parts of the country and of the world realise all that the city stands for. For many people Manchester means cotton ; for a smaller, but nevertheless large and world-wide *clientele*, it stands for electrical equipment, locomotives, rain-coats, and a hundred other industrial products. Its reputation is no less widespread as the home of a great political tradition ; while in more specialised circles its name will suggest a great school of chemistry or historical studies, the Whitworth collection of English water-colours, the Hallé concerts, or the Rylands Library.

An occasional stock-taking is as necessary for a community as for an individual or a business firm. Change is so rapid that an idea of Manchester formed in one decade is bound to be false in the next. Even the ten years that have elapsed since the war have seen great changes, changes that are still at work, modifying and transforming the most stable and familiar features of the city's life. Most of all is it necessary, if any judgment of the potentialities and future of the region is to be formed, to take stock and attempt some survey, after the dislocating influences of the war and post-war decade. No city has wider connexions with the rest of the world than Manchester ; few cities were more intimately affected by the world-war and its consequences. The tenth year of the peace, therefore, is an appropriate time to attempt a flashlight view and note the outstanding features of the community's activities.

At the outset of any such attempt we are met by a difficulty ; what are the boundaries of Manchester ? The only "Manchester" to which precise and definite limits can be assigned is the County Borough with its 26,690 acres and 740,000 population. But the boundaries of the administrative area, though emphasised and deepened by the influence of a single administration, are due largely to historical

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accidents ; they have changed frequently in the past, and will change in the future. They do not circumscribe the community which a Columbian importer of piece goods or a Danish exporter of butter thinks of, when he speaks of Manchester. The Manchester Docks, on this definition, are not in Manchester, nor is Manchester Exchange Railway station ; and the administrative and commercial centre of the city is only just inside the city boundary. The geographer and economist will take a wider area, and in doing so they will merely follow the common practice of ordinary people. The social and economic entity that people mean, when they speak of Manchester, is something wider than the county borough.

Once we leave the city boundaries, however, it is difficult to lay down any precise limit. For many administrative purposes the area covered by the Manchester District Joint Town-Planning Scheme, with a population of three millions, is a natural and convenient unit. The transport facilities (as indicated, for example, by the half-hour radius maps in Figs. 7 and 8), make the same area an appropriate one for many purposes of retail and wholesale trade, for professional services, education, and amusements. But the Cotton Industry, of which the Manchester Royal Exchange is the market and meeting-place, although the most highly localised of the greater industries, spreads far outside the Town-Planning area. The port of Manchester serves an even wider area, both by the facilities it offers for exports and by the market it opens to imports. Any survey of the activities of Manchester that is to be representative must be regional, rather than merely civic, in its scope ; and we shall find it convenient to follow the practice of the geographers, and speak of the Province of Manchester.

Looking at the city then as the centre of a province, we have the key to its special characteristics. It is a *capital city* ; even if it is the capital only of a province, the province is comparable in population and resources rather with one of the Dominions or the lesser European states, than with an English county. The city ministers to the social and intellectual interests, as well as to the commercial needs, of a population that may be put anywhere between three and four millions. It is the most important British centre of the daily, weekly and technical Press outside London ; its University and College of Technology are

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of more than even regional importance ; its art collections are important. The very brief survey in the last chapter of this volume is sufficient to show—and it aims at no more—that the city's interests are not purely commercial and industrial, and that its appeal to visitors is not solely the appeal of a market.

Limit of space, however, made it necessary to select ; only one department of the life of the city and district could be given detailed treatment ; and there could be no question which should be selected. The present Archbishop of York, speaking in Manchester shortly after his translation, very happily described the characteristic that gives the city its hold upon the affections of its own residents. If, he said, one came to Manchester for the amenities of life, one might find it less amply supplied than other places ; but if one came to Manchester to *work*, then one would find in it an active fellowship and stimulus such as no other place afforded. Manchester at work is, therefore, the theme that selects itself ; and work in Manchester, it is no derogation to other activities to say, on the whole, means industry and commerce. Even here it is necessary to select, because it was not possible to represent in the space at our disposal all the immense variety that is, perhaps, the most striking economic characteristic of the region. Within the limits available, however, an attempt has been made to survey the economic activities of the district. The area surveyed is not always the same, because the statistical material available does not always refer to the same area ; but the endeavour has been always to confine the survey to a population that finds in Manchester its natural commercial centre.

A survey of Manchester industry in the year 1929 will suggest to many readers only depression. That is not the impression which the comprehensive statistical survey made in Chapter IV. leaves upon the mind. Rather it is an impression of abundance of resources, variety and growth. So accustomed are we to associating Manchester with cotton that we tend to overlook its importance as, perhaps, the greatest British centre of the engineering and clothing industries, and as the home of a hundred specialised manufactures. It has been a matter of frequent comment, that the greatest rate of industrial growth since the war has been outside the older industrial districts, of which Manchester is the chief. The scope for expansion is naturally greater in

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districts which had little or no important industry before the war ; but it must not be overlooked that the same occupational redistribution, which expresses itself in the establishment of new industries in the South-East, is also going on in the North-West. New industries are developing here also, although their presence is not so noticeable as it would be in more sparsely populated, less industrialised areas ; labour is being transferred from declining to growing industries ; and the Manchester district is, for example, perhaps the most important centre of the expanding electrical engineering industry, the chief area in which artificial silk is worked up, and the scene of the newest developments of the chemical industry.

A study of the occupations of the people brings out most clearly the distinctive economic importance of the associated cities of Manchester and Salford. Commercial, clerical and transport occupations predominate, because it is as a market that the city in the twentieth century focusses the activities of the whole district. A later chapter shows that the Royal Exchange is the largest and most important market in the world for every variety of cotton manufactures. Another points out that the great Co-operative Wholesale Society has its centre in Manchester because that is the best strategic base for its operations. It is not possible to measure the quantity of goods of all kinds that come into the area and are marketed in Manchester, but the careful estimate in Chapter VI. of the food consumption of the area is sufficient indication of its immense significance as a market for the products of other districts and countries.

It was not possible in the space at our disposal to attempt a description, or even a catalogue, of all the industries and trades that fall within the scope of this volume. Only the more important and characteristic could be referred to directly ; the table of occupations in Chapter II., Section ii. and Chapter IV., Section i., must serve as substitutes for any more adequate account of the rest. For the same reason it seemed better to utilise our limited space to survey the underlying conditions and resources, which explain the growth of industry in the past, and provide a basis for expansion in the future. Mr. Barker's account of the geography of the region, of its unique combination of advantages—for work, it should be said, not play—in climate, water-supply, mineral resources, communications, and labour, makes unnecessary a more detailed study of individual industries.

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Taken with Mr. Campbell's account of the transport facilities, Sir Christopher Needham's survey of finance, and Mr. Hughes' description of the merchanting and distributing organisation, it explains the commercial activities at present carried on, and encourages the hope of even greater developments in the future.

The extension of the sea into the heart of the district, and the opening up of seventy miles of factory sites with deep-water frontages by the Ship Canal, have already changed the currents of trade and attracted new industries to the district. The industrial quality and skill of the population, which made Manchester the pioneer of modern industrial methods a century or a century-and-a-half ago, have been heightened by education ; if some decline on its pre-war scale has to be faced in the cotton industry there is compensation in the release of labour for new industries, for which the districts offer every advantage of environment and resource. It is in no competitive spirit that this survey is put before the public ; the development and prosperity of other districts is desired by Manchester, because Manchester trades with the whole world and benefits by its prosperity. But a plain and scientific statement of the activities and resources of the area was a suitable epilogue to civic week ; and such a statement was needed to inform residents of the actualities and others of the potentialities of Manchester. To provide this has been the object of the editors.





CHAPTER I.

MANCHESTER IN RETROSPECT

BY PROFESSOR G. W. DANIELS, M.A., M.COM.



The Origin and Growth of the City

AT the present day there is no part of the world in which the name of Manchester is unknown. Two centuries ago, while the name was of local importance, it had not yet become outstanding among the names of English towns. This, however, is not to say that Manchester had no history before that time. Though for centuries records of the town are scanty, those that exist carry us back to the days of antiquity. It has even been asserted that ancient Britons lived in the neighbourhood, and that Manchester was the site of one of their fortresses, but these assertions belong to the realm of conjecture. That the Romans had a settlement in Manchester is beyond question: a portion of one of the walls of a Roman fort and a collection of objects found on its site are extant to attest the fact. This settlement, at the confluence of the Irwell and the Medlock, near the present Knott Mill railway station, guarding the main strategical point on the military road between Chester and York, apparently declined with the withdrawal of the Romans, but that it existed indicates the importance that was attached to the site of Manchester as far back as the first centuries of the Christian era.

Medieval Manchester

For five centuries after the departure of the Romans nothing is heard of Manchester; but, in the meantime, a new settlement appears to have sprung up near the site of the present Cathedral, this time at the confluence of the Irwell and the Irk, and it is from this centre that Manchester developed into a medieval town and into a modern city. At the time of the Domesday survey (1086) the town appears to have formed part of the manor of Salford; but, shortly afterwards, on the

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creation of the barony of Manchester, a separation was effected, and Manchester came under the control of its own lord of the manor, and began to make conspicuous progress. Early in the thirteenth century, the lord obtained the grant of an annual three days' fair for the town, and it is known that, before the end of the century, a weekly market was held, that a court had come into existence, and that a cloth industry had become established. In 1282 the town contained about 150 burgage tenements and, by 1301, the burgesses had so far advanced as to secure from their lord a charter which confirmed important privileges, most of which, we may surmise, were not new at that time. Apparently, in the thirteenth century, Manchester had the characteristics of a medieval borough, but, by a legal decision of 1359, it was held to be only a market town, with the result that for another five centuries its municipal administration was confined within the framework of the charter of 1301. That this limitation did not impose an insuperable obstacle to the growth of the town is revealed in its later history.

Not much evidence is available of how Manchester fared during the turmoil of the second half of the fourteenth century, but an important event in its ecclesiastical history occurred when, in 1398, Thomas de la Warr, who was a priest and rector of Manchester, succeeded to the barony of Manchester on the death of his brother. At the time the parish extended over a huge area and, in 1421, in order to make better provision for its spiritual needs, de la Warr purchased a royal license to substitute for the rector a college, constituted of a Warden, eight clerical Fellows, four Clerks, and six Choristers, and provided for its support. One consequence of this establishment was that suitable accommodation was required for the clergy, and, for this purpose, a building was erected on the site of the demolished manor house of the lords of Manchester. This building, after passing into the hands of the Derby family in the sixteenth century, and later falling into decay, was purchased in the seventeenth century by the governors appointed under the will of Humphrey Chetham, and still survives as the Chetham Hospital and Library. Another consequence was that the parish church of Manchester became a Collegiate Church, and, to sustain its new dignity, extensive alterations were undertaken which, with later alterations and additions, have given us the present cathedral building. During the sixteenth and the seventeenth centuries the college was dissolved, refounded, and modified, but it was not until the middle of the nineteenth century, when the Collegiate Church

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became the Cathedral, that the titles of the Warden and Fellows were changed to those of the Dean and Canons. As is well known, the bequest of Humphrey Chetham provided for the support and education of a number of poor lads resident in the Manchester area, and here mention should be made of another notable educational foundation, that of the Free Grammar School, in 1515, by Hugh Oldham, Bishop of Exeter, who, like Chetham, was a Manchester man by birth. For 350 years this school was, in fact, a "free" school; only as recently as 1867 was the decision made to admit paying scholars.

The Beginning of the Textile Trades

When the extensions of the Collegiate Church became necessary, it is significant of the industrial progress that Manchester was making that wealthy men engaged in the cloth trade of the district contributed largely to the cost. This brings us to the sixteenth century, from which time records of the industrial development of the town become more plentiful. Early in the century Manchester was described as a great clothing town and as having associated with it one of the three most important clothiers of the north country. Somewhat later, when John Leland made his itinerary and visited Lancashire, he found Manchester the best built, the busiest, and the most populous town in the county; and, in 1541, there appeared the oft-quoted statute in which Manchester is represented as largely engaged in the making of linen and woollen cloths; as a resort for traders from Ireland and other parts of the realm; and as being noted for the good order and the straight and true dealing of its inhabitants. Already the name of "cottons" had begun to appear with some frequency, and, in a statute of 1552, they are definitely associated with Manchester; but these goods appear to have been a species of woollens. Before the end of the century, however, there is authentic evidence that a manufacture of "fustians" had begun, and it is known that these goods were partly composed of the vegetable fibre cotton. The large significance of this manufacture is that, during the seventeenth and eighteenth centuries, it was pre-eminently the cotton manufacture.

From the sixteenth century Manchester attracted the attention of many observers, and invariably they laid stress on the industrial importance of the town and on the progress that it was making. By 1641 we learn that the activity of the textile industry had become largely dependent upon regular supplies of cotton-wool from the

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East, upon supplies of linen-yarn from Ireland, and upon the state of demand for its products in outside markets. At this time, too, the town began to attain political eminence, and, in 1642, had to withstand a siege by a royalist force owing to the attitude taken by the townspeople in the struggle between King and Parliament, an attitude which caused them to be eulogised "As the honest-hearted and most courageous Manchesterians; the principal men in the kingdom, next to the most famous and renowned citie of London, that fight most prosperously for God and true religion." Until the end of the war, Manchester remained the headquarters of the Parliamentary forces, in Lancashire, but it is significant that Richard Heyrick, Warden of the College, who preached the sermon before the House of Commons on the occasion of Cromwell's victory at Preston (1648) also preached the sermon when the restoration of the monarchy was celebrated in Manchester in 1661. Before the restoration religious differences had become acute in the town, nor were they resolved afterwards, the Act of Uniformity (1662) causing certain Fellows of the Collegiate Church to retire, and to begin preaching privately to congregations of their own. Ultimately, out of these differences there emerged a High Church and Tory party associated with the Collegiate Church; a Low Church and Whig party associated with St. Ann's Church (erected 1712); and a Nonconformist party whose place of worship, the Cross Street Chapel, was erected in 1694. The broad lines of division here indicated are constantly revealed in the social history of Manchester through the eighteenth and the first part of the nineteenth centuries.

Immediately before the commencement of the civil war a project was mooted, with influential support, that Manchester should be made the seat of a University, and that the fifteenth century college building should be utilised for the purpose; but the time was inopportune. There is much evidence that the war did not tend to the prosperity of Lancashire and in 1645 Manchester was ravaged by a pestilence which, we are told, ruined most of the inhabitants living upon trade, and brought many families into abject misery. In 1650, however, an informative account of the town appeared in which more favourable conditions are suggested: "The people in and about the town are said to be in general the most industrious in their callings of any in the northern parts of the kingdom. The town is a mile in length, the streets open and clean kept, and the buildings good. The

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trade is not inferior to that of many cities of the kingdom, chiefly consisting in woollen friezes, fustians, sackcloths, mingled stuffs, caps, inkles, tapes, points, etc., whereby not only the better sort of men are employed, but also the very children by their own labour can maintain themselves; there are besides all kinds of foreign merchandise brought and returned by the merchants of the town amounting to the sum of many thousands of pounds weekly." In this extract three branches of manufacture are indicated, the woollen, the fustian, and the smallware branches. Later, a check manufacture became more prominent than that of woollens, but, with this reservation, these branches of manufacture were outstanding until the modern cotton industry was established and may be regarded as the original textile trades of Manchester.

Unreformed Manchester

Until towards the end of the seventeenth century it is said that those engaged in these trades possessed only a small amount of capital, and, while this may be generally true, it is known that from the sixteenth century many wealthy men of the locality had been interested in the trades as merchants. One significant mark of progress is that a visitor to Manchester during the reign of William and Mary (1689-94) could remark that, mostly, the houses were now built of brick and stone, whereas the old houses were constructed of timber. Evidence of the development which must have taken place between this date and 1729 is given by the erection, in that year, of the first Manchester Exchange, which, strangely enough as it now appears, was provided by Sir Oswald Mosley, who, at that time, was lord of the manor of Manchester. The fact is, of course, that, until the town received its charter of incorporation in 1838, its administration still retained many of its ancient characteristics. In the middle of the eighteenth century Manchester was governed by a Court Leet, the first recorded meeting of which was held in 1552. At the Michaelmas meeting of the Leet a jury of householders appointed the officials who were to be responsible for the government of the town during the ensuing year. Chief among these officials were the boroughreeve and two constables, the status of the former approaching that of the mayor of a modern municipality. It was the boroughreeve who presided at the town's meetings, which were called far more frequently than at the present day. At these meetings, resolutions on political, commercial, and other questions

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were proposed and afterwards given forth as the voice of the town, though not infrequently the acute division of opinion which prevailed led to unofficial meetings and the expression of other views. The lines of division, which persisted for long afterwards, were indicated in 1763, when a scheme was projected for securing a royal charter for the town, under which it was intended to confine the administration to a body of inhabitants, one third High Churchmen, one-third Low Churchmen, and one-third Protestant dissenters. Although at first received with favour the scheme fell through, because, we are told, the High Churchmen feared that the other two sections would unite against them. The constables, who were responsible for the maintenance of order in the town, had under them a deputy-constable (the name of Joseph Nadin has become historical) and from one to four beadles, while a number of residents were annually sworn in as special constables. In addition, many other officials were appointed for duties which it is very unlikely that the type of men appointed actually performed.

In view of the growth of the town in the second half of the eighteenth century this form of administration ceased to be adequate to the situation. No doubt it answered quite well in the middle of the seventeenth century, when a plan of Manchester shows the town as consisting of three streets : Deansgate, Market Stead Lane, and Long Millgate, with a market place at the centre of the town, round about which the most considerable blocks of buildings were situated. Even a century later, when another plan shows that the intervening expansion had consisted not so much in extending the limits of the town as in the formation of new streets at right-angles to the old ones, and in the filling-up of empty spaces, the form of administration may not have been altogether inadequate. Soon after this date, however, the population began rapidly to increase and the town to extend beyond its former limits. The rate of expansion both before and after the middle of the eighteenth century is a correct index of the industrial progress that was taking place.

In 1745 Manchester again gained some political prominence by the support given by a section of the townspeople to the Pretender. One interesting result was that a soldier, who passed through the town, afterwards wrote a description which is worthy of quotation : " Though this is no city, corporation, nor so much as a town, strictly speaking, the highest magistrate being a constable or head-borough, yet it may be styled the greatest mere village in England, and is more populous

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than York or most cities in the kingdom . . . As the town is very populous so the inhabitants are very industrious, driving an extraordinary trade in fustian manufacture, and that called Manchester cottons for womens' wear, which it has been famous for above 100 years, has been very much improved of late by some inventions of dyeing and printing, which by the great variety of other manufactures known by the name of Manchester goods, as tickings, linens, checks, hats, and all kinds of what they call smallwares, as thread, tapes, filleting, qualities which enrich the town and render the people industrious, resembling those of Holland, the children here being all employed, and earn their bread. They export vast quantities of their goods abroad, as to the West Indies, etc. As an inland town it has the best trade of any in these north parts."

The Industrial Revolution

As is well known, the great expansion of the modern cotton industry, and with it the rapid growth of Manchester, date from about 1770. From the beginning of the century there had been steady progress and there is much evidence that it became more striking after about 1720. In 1739 a statement appeared that, during the preceding twenty years, the manufacture of cotton goods, mixed and plain, and of other goods for which Manchester was noted, had greatly developed, and that, within this time, many thousands of pounds had been expended in additional buildings, the number of houses having increased by no less than 2,000. This number may be an exaggeration, but there is no doubt that by the middle of the century many of the rich merchant-manufacturers of the town possessed handsome stone houses of recent erection. It was during these years that attempts began to be made, with as yet but limited success, to invent more efficient machinery for use in the cotton industry. At the same time the industrial and commercial organisation of the Manchester district was undergoing change. The merchant-manufacturers who carried their goods about the country on pack-horses, were being displaced by "riders-out" with patterns, and the public carrier. Better means of communication by road and waterway were being sought, and the system of distributing materials to workpeople, scattered about the countryside, and collecting goods from them, was undergoing modification, due to the emergence of "putters-out" and country manufacturers. After the appearance of the inventions associated with the names of Hargreaves, Arkwright,

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Crompton, Watt, and others, the steady expansion of the first half of the eighteenth century became a rush, of which Manchester experienced the full effects. Previously its characteristics were those of a country market town, but with the coming of the factory system it was transformed into a great industrial town, into which population crowded, pushed from behind by the restricted scope of employment in the outside districts, and attracted in front by the advantages which the town seemed to offer. In 1756 the population of Manchester and Salford was calculated as 20,000, but, in 1773, Manchester alone contained 22,000. When the first official census was taken in 1801 this number had increased to 75,000; in 1811 to 89,000; in 1821 to 126,000; and in 1831, the last enumeration before the incorporation of the town, to 182,000.

Municipal Reform

This increase of trade and population created a problem with which the existing system of administration was quite incapable of dealing, and, long before the charter of incorporation was obtained, efforts were made to effect improvements both in the town and in its administration. A move was made in the first direction in 1775, when a number of persons "desirous of restoring the peace and harmony of the town" formulated a scheme for widening several streets near the centre of the town, the cost of over £10,000 being defrayed by public subscription. To improve the administration, an Act was obtained in 1791 for the lighting, watching, and cleansing of the town and under it there came into existence a body of commissioners with power to levy a rate of 1s. 3d. in the pound. This body, which consisted of the boroughreeve and constables, the warden and fellows of the Collegiate Church, and the owners and occupiers of buildings of £30 a year value, remained in existence, with small modifications, until 1838, but, whatever improvement it may have represented when it was introduced, it is certain that its undemocratic character was resented by the reformist section in Manchester long before it disappeared. On the other hand, the idea of elected representatives was entirely repugnant to the Conservative section, whose position was expressed in 1816 by the proprietor of a Manchester newspaper in the statement that "It has often been the subject of congratulation among the judicious inhabitants of the town that they were not governed by a corporate body, nor liable to be split into factions by contested elections." He also noted with pride

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that, under the existing system of administration, "fifty-three watchmen nightly parade the streets from eight o'clock in the evening till six in the morning during the winter months, and from ten in the evening till four in the morning during the summer. The town is lighted by 2,758 lamps and the streets are swept and the soil carried off twice a week. A large office in King Street has been appropriated as a police office, and from hence the whole of the watchmen set out every night to their respective stands, and here they bring back their rattles, etc., when the approaching day puts an end to their nocturnal duties."

Under this system, however, it had been possible to make further improvements in the town and, in 1821, an Act was obtained for the purpose of widening Market Street Lane, King Street, and their approaches, at an estimated cost of £200,000, this, apparently, being the first large improvement of which the expense was not met by public subscription. Four years later another Act was procured for lighting the town with gas, and this was a public undertaking from the beginning. Apparently the undertaking was regarded as an excellent means of raising money to defray the cost of improving the town, and the gas was sold at 14s. per thousand cubic feet, which yielded a considerable profit. As the large factory owners had their own gas plants, almost the only consumers of the public supply were the shopkeepers and the publicans of the town, who asserted that the improvements were being effected at their expense, a position in which they were not prepared to acquiesce. In 1829 the system of commissioners was somewhat modified, and shortly afterwards another Act was obtained for the widening of London Road, Cross Street, parts of Long Millgate, Hunt's Bank, and other places, and yet another just before the town was incorporated, since when improvements have followed each other in rapid succession, and with them old Manchester has gradually disappeared, although more still remains than is generally realised.

Space does not permit of an account of the final disappearance of the old system of administration and of the controversy that ensued before Manchester was established as an incorporated borough. Suffice it to say that the leader of the movement for incorporation was Richard Cobden, who as a commissioner and as a member of the court leet jury, saw the necessity of taking advantage of the Municipal Corporations Act of 1835, which enabled a charter to be granted on the requisition

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of the inhabitants of large towns. Bitter opposition had to be faced from the Conservative section, who supported the old system perhaps for no better reason than that it was old, and from a section of the working class who imagined that somehow incorporation would give greater power to the class of which Cobden was a representative type. Although the charter was obtained in 1838, it was not until 1845, when the manorial rights of the Mosley family were purchased for £200,000, after a refusal to purchase them for £90,000 in 1808, that the administration of Manchester was completely freed of its medieval characteristics.

War Boom and Depression

Between 1793 and 1815 Manchester witnessed remarkable industrial changes, and, in common with the rest of the country and with Europe, passed through troublous times, which is hardly surprising seeing that this was the period of the Revolutionary and Napoleonic Wars. In 1793 factory building in towns was only just beginning; in 1802 there were 52 in Manchester and Salford; in 1816 there were 64, and probably more than this number had been at work some years before. At the first date the amount of cotton imported into the country was about 30,000,000 lbs., and the value of the cotton manufactures exported about £2,000,000. At the last date the cotton imports had increased to nearly 100,000,000 lbs., and the export of cotton manufactures to £17,500,000. During the period many men made fortunes, many failed, and even the most successful had their times of crisis. Mainly owing to the wars the period was one of uncertainty, of booms and depressions, with the workpeople ever in a state of distress and consequent unrest. Between the laying of the first stone of a new Manchester Exchange in 1806 and the opening of the building in 1809, business conditions had been critical, and, at the time of the latter ceremony, a boom was just beginning which continued into 1810, after which there was another period of depression which lasted until 1814. In this year came the boom which everyone had anticipated must come on the conclusion of the war, but it was of short duration, and spent itself early in 1815, to be followed by another five or six years of almost unbroken depression.

This alternation of short periods of feverish boom and years of depression continued to the middle of the century, and forms the background to the many eventful happenings in Manchester during

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the period. Until the Reform Act of 1832, the town had no representation in Parliament, an unimportant matter with the dominant party in the town, the members of which claimed to be the only loyal supporters of Church and King, a loyalty which they expressed by opposing change in any direction. The mere mention of the definite repeal of the Test and Corporation Acts, which imposed liabilities on dissenters, although long since virtually repealed by the passing of Indemnity Acts, roused them to a pitch of unbridled fury. Nevertheless, the town played a prominent part in the reform movement and became suspect as early as 1790, when the "Manchester Constitutional Society" came into existence, although Thomas Walker, the borough-reeve for the year, who happened to be in favour of reform, was at the head of it.

When the outbreak of war became imminent, reformers could not be tolerated, and an attack was made on Mr. Walker's house, and he himself had to face a charge of conspiracy at Lancaster Assizes, when he was honourably acquitted and the chief witness against him committed for perjury. At this time the reform movement was confined to middle-class inhabitants of the town, and, so far as they were concerned, under the stress of war conditions, it practically ceased until the country was once again at peace. In the meantime, as regularly as the trade depressions, the working-class population passed through seasons of privation, and with the same regularity, unrest in the town became acute, sometimes culminating in food-riots which were sternly repressed with loss of lives, either in the process of repression or after the trials which followed. Under these conditions the working-people, who previously always seem to have been conservative in their outlook, began definitely to regard the Government of the country as the cause of their ills and to look to its reform as the remedy.

Only brief mention can be made of the agitation in the years following the conclusion of the war, of which the outstanding events were the intended march of the "Blanketeers" to London in 1817 to present a petition, the Peterloo Meeting in 1819 with its tragic consequences, and the repressive measures known as the "Six Acts" which immediately followed. But these measures did not bring quiet to the town and district; the only security for that was a state of trade and employment which gave opportunity for the working-people to maintain a more stable existence. That they had an anxious desire for reform needs not to be doubted, but the coincidence of disturbance with

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distress is too marked to allow the belief that the efforts to obtain reform would have been accompanied by violence had more favourable economic conditions prevailed. It was primarily the conditions that did prevail that gave Manchester its prominence as a centre of unrest in the first decades of the nineteenth century.

The Manchester School

During the course of these events, however, another movement was gaining ground in Manchester which gave the town a wider political fame and brought out that political individuality which, on occasions, still finds expression. The first enunciation of the principles of free-trade and of the body of thought associated with the "Manchester School" cannot, of course, be attributed to Manchester men. Nevertheless, it was as certain as anything can be that, if anywhere, Manchester was the place where they would find practical acceptance. They were as suited to the strong independent type of men to whom the establishment and expansion of the modern cotton industry was due as they were to the conditions of the industry, with its complete dependence upon outside sources for its chief raw material and its large dependence upon foreign markets for the absorption of its products. Once it was realised that no Government action of a positive character could favourably affect the position of an industry so situated, a definite attitude opposed to Government interference in economic matters became inevitable. It was practical rather than theoretical considerations that caused Manchester to become the centre of free-trade advocacy.

Still, it cannot be said that organised opinion in Manchester moved quickly. In the 'twenties of the nineteenth century one or two meetings were held in the town rather feebly protesting against the corn-laws, but no decisive move was made until the 'thirties. In the meantime, under the influence of the frequent and long-continued trade-depressions, the merchants and manufacturers moved in the direction of a demand for greater freedom of trade and the appearance, in 1835, of a pamphlet by "a Manchester merchant" (Cobden) on *England, Ireland, and America*, in which many of the doctrines of the Manchester School found expression, was a significant event. In 1838 the "Manchester Anti-Corn Law Association" was formed, and, shortly afterwards, at a meeting of the Chamber of Commerce, a petition for the repeal of the existing corn-laws was proposed. By this time a

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petition with a wider reference commended itself to the majority of the members, and one drawn up and proposed by Cobden was agreed to which, while it ostensibly had direct reference to the corn-laws, drew attention to "the inalienable right of every man to exchange the results of his labour for the productions of other people" and implored the House of Commons not only to repeal the corn-laws but "to carry out to the fullest extent, both as affects agriculture and manufactures, the true and peaceful principles of free-trade by removing all existing obstacles to the unrestricted employment of industry and capital." Probably it was not expected that this petition would have much effect, and early in the next year "The Anti-Corn Law League" was formed with its headquarters in Manchester.

The propaganda in the country, and the advocacy of free-trade in Parliament between 1839 and 1846 by those connected with this organisation are well-known facts and require no further mention. What gained for these men the title of the Manchester School, however, was not only their advocacy of free-trade but the application of the essentials of the case presented for it to other questions. They disliked monopoly and privilege in any direction, and regarded economic, and to a large extent social, progress as the result of self-reliant, enterprising individuals striking out in this and in that direction, wherever they saw an opportunity, and thus attaining a success which was more than personal. And no one can deny that this view contains fundamental truth which never can be ignored, even though it has its deficiencies. In the contemporary agitation regarding factory legislation, again largely identified with Manchester, Cobden and John Bright were found definitely on the side of the opposition, the Ten Hours' Bill, in the view of the latter, being "one of the worst measures ever passed in the shape of an Act of the legislature." How their attitude was an expression of the view just stated is seen in Cobden's statement that such legislation was an inducement to work-people to cherish "flattering and delusive prospects of cheap benefits to be derived from Parliament rather than urging them to a course of self-reliance." Their typical individual was a successful self-made Manchester man, of whom, certainly, they had many examples around them, and they did not fully face the situation as it exists with an assortment of individuals with unequal gifts and opportunities. On the other hand, their principles led them to hold advanced views on education which, in the

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opinion of Cobden, ought to be secular, universal, and compulsory, and their attitude to parliamentary reform is seen in the part played by Bright in the movement which resulted in the Act of 1867 by which town artisans were enfranchised.

Of their views on colonial policy little needs to be said. Their principles led them to contend for self-government and independence for the colonies, both in the interests of the colonies and the mother country, and much that they advocated is now accepted and has become accomplished fact. This, however, can hardly be said of their analysis of the causes of war, and especially of their proposals for the maintenance of peace. War, they asserted, inevitably laid large burdens on communities in heavy taxation, and it also discouraged trade by giving an excuse for retaining a system of protection. Its most potent causes were found in international jealousies and mistrust; in one State interfering in the affairs of another; and in the maintenance of large armaments. The remedy for the first was greater commercial intercourse furthered by free-trade; for the second, a policy of non-intervention; and, for the third, a reduction of militarist expenditure. Although these views undoubtedly had, and still have no small influence on British policy, it must be admitted that they never took that firm hold on the public mind which their advocates would have liked to see, possibly because the underlying philosophy was too simple. Still, even though it can be shown that the philosophy of the Manchester School had its defects, and that, on many vital questions, the teaching of the School was negative rather than positive and afforded little practical guidance, there can be no question that truths of lasting importance were propounded, and Manchester has no reason to be ashamed of having given its name to the School.

Modern Manchester

By the middle of the nineteenth century old Manchester was rapidly merging into modern Manchester. During the preceding eighty years the district had been the birthplace of many of the great inventions which had ushered in a new industrial era, and where it had not, it had been their adopted home. As, in 1761, it saw the beginning of a new era in communications in the opening of the Duke of Bridgewater's Canal, so, in 1830, it saw the beginning of another era when the first great railway was opened into the town. Turning to the town itself, between 1832 and 1846 it had become represented in Parliament; it

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had received its charter of incorporation ; the court leet and the rights of the lord of the manor had disappeared ; and it had been the centre of a great political movement which had attracted world-wide attention. But, in addition, significant changes had taken place in the relations of the town to the outside districts. Modern Manchester means greater Manchester. In 1844 we find a writer remarking that Bolton, Bury, Rochdale, Oldham, Ashton, Stalybridge, Hyde, Stockport, etc., were to be regarded as the manufacturing parts of one great town. " If we take our station in Market Street, Manchester, at the west-end of which is the Exchange, we are immersed in the heart of the system. We have around us the wholesale warehouses and offices wherein is transacted all the business between the dealers, the manufacturers, the spinners, the bleachers, the calico-printers, etc., whether of Manchester or of any of the surrounding towns. One street especially, viz., Mosley Street, presents a curious index to the whole arrangement. Here almost every house is occupied in the way stated ; no manufactures are carried on, no retail shops exhibit the manufactured goods, but every house and almost every floor of every house constitutes the business establishment of some large manufacturing firm . . . A bargain is struck, say, for 10,000 pieces of calico, as per sample, and this may be done in a small room between the manufacturer and the dealer, while the goods are perhaps at that moment being manufactured at Bolton, or Ashton, or Stockport."

Evidently this description requires no great alteration to make it a correct one of the City of Manchester in 1929. Eighty-five years ago Manchester was ceasing to be regarded as a factory town ; it was being regarded as the commercial and distributing centre of the cotton industry ; then, as is still more the case at the present day, the factories had to be sought in greater Manchester. During the intervening time the growth of greater Manchester has proceeded as the growth of Manchester in earlier decades, by the filling up of empty spaces, until, within walking distance of the Exchange, there is a population of 2,000,000 people, of which more than five-eighths are within five miles, and nearly one-half within the civic boundaries of Manchester and Salford. To double this population it is only necessary to extend the radius of the area to half-an-hour's railway journey, and within this area may be seen the most important concentration of industries and trades that the world can show.

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Such is the area of which Manchester is now the centre ; it has long ceased to be a town ; it has become a capital city, in which nearly all that happens is of as much significance to the people of the area as to those who reside within the boundaries of the city. Since the middle of the nineteenth century Manchester has been associated with many important movements, but rather as their focus than as their place of origin. When the Bishopric of Manchester was created in 1847 and the old Collegiate Church became a Cathedral ; when Owen's College was founded in 1851, to become the chief college of a University in 1880, and independent as the Victoria University of Manchester in 1904 ; when the Ship Canal was opened and Manchester became a seaport in 1894 ; when the John Rylands' Library was built and dedicated to the public in 1899 ; when the Royal Exchange was extended so as to accommodate its 12,000 members in 1921 ; all these were important events in the history of modern Manchester, but equally they were important events in the history of the whole of that great area which comprehends South-East Lancashire and the adjoining portions of Cheshire and Derbyshire.

This brief account of Manchester began with the statement that there is no part of the world in which its name is unknown ; it may end with the statement that there is no part of the world whose name is unknown in Manchester. Nearly two centuries ago foreign merchants had begun to settle in the town, and, as its trading connections extended, the flow continued in increasing volume, with the result that is now seen on the name-plates of business-houses in all the important streets. The observer who walks through these streets may within the space of a few minutes have mixed with men of every nationality, and if, perchance, he has raised his eyes to notice the names impressed on the bales of goods which pass him by, his imagination will have transported him to all the important trading centres of the world, many of which were famous when Manchester was but an infant. Thus Manchester has become a cosmopolitan city, and, so long as the material welfare of Manchester men continues, as at present, to depend on the smooth working of a world economy, they must, of necessity, be international in their outlook.



CHAPTER II.

THE GEOGRAPHY OF MANCHESTER



SECTION I.—GEOGRAPHICAL SITUATION

By W. H. BARKER, M.A.

MANCHESTER is both the physiographic centre and the commercial capital of South-east Lancashire. Important for long as the organising centre of the cotton industry, the city has established recently new claims to dominance in the region which is one of the most densely populated provinces of Britain. Considered as a physical division, South-east Lancashire represents a great lowland plain bounded on the north and east by the moors of Rossendale and the Pennines. These surrounding uplands sending their waters to feed the River Irwell form natural limits to the area within which is a girdle of large towns. Bolton, Bury, Rochdale, Oldham, Ashton and Stockport are the principal communities extended along this urban girdle, whose interests are served by Manchester. In the textile industry, each town has an independent importance, but commerce as a whole is directed and controlled through the medium of the metropolis.

Lancashire virtually monopolises the cotton trade of Britain and this has laid the foundation of its industrial greatness. It is not readily apparent, however, why the cotton industry became localised in the Manchester region rather than in the immediate neighbourhood of the port of Liverpool. Not only had Liverpool first call, as it were, on the raw material, but difficult country rendered inconvenient and costly the movement of cotton, raw and manufactured, between the port and South-east Lancashire.

The fact is that raw cotton has followed the wind and rain. It is true that a high relative humidity is essential to the cotton trade, but Mr. H. W. Ogden has shown that this is not the strongest pull which has moved cotton from Liverpool to Manchester. From careful observation he records, "Around Liverpool, the port of entry,

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stretching from Southport through St. Helens to Warrington there would appear to be a belt with an atmosphere at least as humid as that of Bolton or Manchester. Through this region the cotton was carried further inland, and the only place in the belt where manufacture takes place to-day is Warrington." The prime physical explanation lies in the abundance of soft lime-free water which comes down from the moors. From the coastline to the hills the rainfall almost doubles, rising from 25 ins. in the west of the Wirral to 45 ins. on Saddleworth. Winds from the west sweep and eddy in the "bay" formed by the Rossendale and Pennines precipitating their moisture in increasing quantity as the crestline is approached. Here is a wide gritstone catchment area and natural filter bed, yielding through innumerable springs and water courses an abundant and perennial supply of pure lime-free water. This is the key to the localisation of the two great textile industries—the wool and cotton—which hang on either side of the sandstone moorland saddle. Look at Fig. 1 facing this page and note the meaning of these streams. Bleach and dye works line the streams and private reservoirs dot the moors. Practically all the water rights are commandeered for the cotton trade. The whole cotton industry, too, lies east of a line separating soft waters from hard. This water supply is Nature's unique gift and Man has ably utilised it.

Now the age of steam compelled great industry to rest upon a coal-field. This gave a new industrial value to the north of England where the coalfields lie. Fortunately South Lancashire could meet this new demand without dislodging its early cotton trade. To-day her working collieries fall within a triangle which extends its base approximately from Wigan south to Leigh and has its apex in Manchester. It is virtually at the junction of moorland and plain, one with water for bleaching and dyeing processes and the other yielding coal, that the major spinning centres such as Oldham, Bolton and Bury are located.

To water and coal must now be added salt, the basis of the chemical industries. Salt is obtained from the Cheshire field mainly at Northwich and Winsford, and apart from its utilisation for certain chemical processes in the cotton industry, it serves a variety of chemical trades in a series of towns of which Runcorn, Widnes and Warrington are the most important. In brief, it may be said that the local resources of water, coal and salt are the natural foundations of the great super-structure of the cotton industry. The situation of Manchester in relation to these natural resources has established its importance

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and Yorkshire. The total area covers approximately 1,020 square miles and extends from the northern boundaries of the boroughs of Haslingden, Rawtenstall and Bacup on the north, to the county boundary of Staffordshire on the south, and from the Pennine Range and the eastern boundary of the rural district of Chapel-en-le-Frith on the east to the western boundary of the urban district of Billinge and the rural district of Warrington on the west. The region, in fact, coincides approximately with the watershed areas of the rivers Mersey and Irwell as controlled by the Rivers Mersey and Irwell Watershed Joint Committee. It has a population of approximately 3,000,000 and an assessable value of about £20,000,000.

But Manchester has a wider horizon than that indicated above. In the days of horse-drawn traffic, distance and gradient determined the limits of a market's function. Railways and motor lorries have broken down both obstacles. To-day we may almost draw concentric circles to mark effective transport distances. When this is done, Manchester stands unique among the great industrial cities. Within a radius of forty miles there fall the following industrial regions; the West Riding woollen towns, the metallurgical centres of Sheffield and Chesterfield, the Potteries, the heavy chemical and colliery zone extending from north to south across the middle Mersey and the great industrial and shipping region of Merseyside astride the estuary. Double the radius to eighty miles—well within easy road and railway distance—and in addition there is included the Black Country and the Erewash Valley, together with such important industrial centres as Shrewsbury, Derby, Nottingham, Lincoln and the port of Hull. Such a radius also touches the fringe of the coalfield of Northumberland and Durham on the north-east and the coalfield of Whitehaven and Workington on the north-west.

This centrality for industrial north England has great significance, for to-day Manchester is the meeting place of two routes, one by sea, the other by land. The Manchester Ship Canal extended the ocean highways some thirty-five miles inland into industrial England. This has fixed for all time the north-west terminus of one of the great historic routes across England—the line of the Watling Street. In the south-east there has never been any doubt of the terminus. The Thames gave a thirty-five-mile natural waterway from the open ocean to the pool of London at a point where land traffic could pass from south to north at London Bridge. Of the direction across England there

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could be no doubt. It followed the line of waterparting separating the river systems of eastern and southern England and provided the straightest and easiest route to the north-west, a route which from the days of the Romans to our own has been pre-eminent. The settlement of the north-west terminus was long delayed. Chester had pre-eminence in the Middle Ages when traffic with Ireland was of first importance. So strong was this position that it was considered inevitable that the Dee estuary would be the outlet of the growing Lancashire trade. The first ship canal was projected not towards Liverpool but to Parkgate, an outport of Chester. That was more than a hundred years ago. The silting of the Dee negated all the efforts of Chester to retain its great position where the Watling route approached the sea. Liverpool, with a deep but difficult estuary, displaced Chester and built her line of riverside wharves and docks. But, though she gained the traffic of the sea, she was cut off from the great mid-England route by the River Mersey and its marshes. Fortunately, South-east Lancashire, with its growing trade and population, could with difficulty be attached to Liverpool, providing a useful hinterland. But when the sea was brought to Manchester, the whole position was changed. The great north-west route through the Midland Gate found in Manchester a terminus comparable to London at the other end. In the midst of a great conurbation or town group, ships from the seven seas can discharge and take on cargo, not only at a centre from which the whole of industrial England can easily be reached, but at the end of a natural and historic thoroughfare the south-eastern terminus of which is London.

SECTION II.—POPULATION AND GROWTH

THE population of the City of Manchester at the last census (1921) was 730,307. The census was taken in June, when many residents were absent on holiday; when allowance is made for these, the estimated population was 744,000. Since then it has increased, and was put by the Medical Officer of Health at 767,530—362,439 males and 405,091 females—in the middle of 1928. The area in which this population lives is 26,690 acres, giving a density of 36 persons to the acre.

The administrative area, to which this population relates, however, is only the core of a densely populated region which finds in Manchester

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its commercial and cultural centre. The City of Salford (population in 1921, 234,150) contiguous and continuous, is economically part of the same urban centre, and brings up the combined population to close on a million. Within a ten-mile radius are four other County Boroughs—Bolton (176,678), Oldham (145,001), Bury (56,426), and Stockport (123,315)—eight Municipal Boroughs and a number of Urban Districts, like Stretford, with populations greater than many boroughs; within the area covered by the Manchester and District Joint Town Planning Advisory Committee, an area of rather more than 1,000 square miles, a population of 3,000,000 is contained.

Figures 3 and 4 reveal a geographical unity not recognised by history. It has been said that the stroke of a Norman Baron's pen divorced Manchester and Salford in all but their devotions, and that what was then divided no one, as yet, has been able to unite. This is but a partial truth. It is quite a common geographical phenomenon for two settlements on either side a river to grow under common influences until their economic interests coalesce across the bridges, though their civic institutions continue apart. This leads, of course, to most unfortunate consequences, in the non-co-ordination of public services and in the unequal development of what has actually become a single human settlement standing astride the river.

Now a city is more than a congregation of men—an urban community is the culminating expression of a regional effort. Ratzel declared that the *position* or geographical situation of a town is the necessary and often sufficient condition of its greatness. Manchester, we have seen, has a position of great geographical worth. The *site* or topographical situation gives the city an opportunity to express wisely or otherwise its personality, its business efficiency and its culture.

The civic spirit is not synonymous with economic enterprise, though the form of its expression is often determined by economic factors. To any generation a city is both a heritage and trust. The citizen of to-day builds upon the past for future generations, and this task is only possible by adjusting wisely old forms to meet new ways. No city has surveyed more carefully than Manchester existing demographic conditions with a view to planning rightly the development and expansion of the city. A hundred years of industrial growth has trebled its population and fundamentally altered its characteristic business activities. Thus in 1839 the occupations of Manchester and Salford are given as follows:—

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MANCHESTER AND SALFORD, 1839, A.D.

Employed in cotton factories	18,353
" " other factories	1,433
Hand loom weavers	3,192
Employed in warehouses	7,007
" " manufactures	7,067
" " building trades	4,515
" " clothing trades	6,280
Occupations not classified	23,952

Total .. 71,799

These activities should be contrasted with those given in the 1921 Census, when, the population of Manchester was 730,307 and Salford, 234,150. The table is for persons aged 12 and over :—

	Manchester		Salford	
	Males	Females	Males	Females
<i>Population over 12 years</i>	266,075	306,904	84,691	95,811
Agriculture	1,351	63	293	12
Mining and Quarrying ..	1,969	11	991	3
<i>Coal</i>	1,934	10	981	1
Makers of Bricks, Pottery and Glass	1,022	178	305	17
<i>Glass</i>	650	73	241	14
Chemicals, Paints, Oils ..	1,825	219	507	95
<i>Chemicals</i>	1,449	160	215	37
Metal Workers	41,809	2,065	12,088	715
Electrical Apparatus ..	4,458	468	1,884	693
Leather	741	463	239	155
Textile Workers	5,907	15,270	3,167	7,117
<i>Winders</i>	97	3,781	41	2,009
<i>Spinners</i>	633	1,629	43	539
<i>Carders</i>	46	1,483	19	337
<i>Weavers</i>	159	2,763	198	1,816
Makers of Textile Goods	8,293	28,301	2,275	7,654
<i>Tailors</i>	3,698	8,114	1,018	3,176
Wood and Furniture ..	10,945	700	3,440	201
Paper Trades	5,078	4,174	1,893	1,763
<i>Printers, Bookbinders</i>	4,675	2,487	1,510	1,098
Builders, Bricklayers ..	8,232	57	2,615	23
Painters and Decorators	3,828	77	1,007	32
Transport	33,070	2,172	13,723	758
<i>Railways</i>	7,088	177	2,081	31
<i>Road</i>	16,264	128	5,239	43
<i>Water</i>	1,873	34	4,046	10
Commercial, Finance ..	28,345	12,409	6,807	3,164

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This table should be compared with the table, showing the occupational distribution of the larger area of which Manchester is the centre, given in Chapter IV., Section i.

If we select the most important trades, measured by the number *per thousand* of males over 12 years employed, the special position of Manchester as a central and metropolitan city is emphasised :

Occupation of Males over 12 years, per 1,000 persons.			
	Manchester	Salford	
Metal Workers	157	..	143
Transport :—			
<i>Railways</i>	27	..	25
<i>Road</i>	61	..	62
<i>Water</i>	7	..	48
<i>Other</i>	29	..	27
	—	..	—
	124	..	162
Commerce, Finance, Insurance (not clerks)	107	..	80
Clerks and Public Administration ..	87	..	74
Textile Trades :—			
<i>Textile Workers</i>	22	..	37
<i>Makers of Textile Goods and Dress</i>	31	..	27
	—	..	—
	53	..	64
Workers in Wood	38	..	39

It is clear that the characteristic and principal activities—the metallurgical trades, transport and the organisation of commerce—reflect the capital or metropolitan function of Manchester-Salford. This is even true of the other two industries, the timber trade in packing cases and furniture and the textile trade of the manufacture of clothing and dress goods. Our immediate task, however, is not to examine the economics of the growth and the change of industries but to explore that much more subtle phenomenon, the life and spirit of the city.

The civic tree was planted where the rivers Irwell, Irk and Medlock meet. It has never been uprooted, though its roots have been severely pruned. The old street plan may still be recognised and some few landmarks still remain. The area is to-day the commercial and business centre, crowded by day, deserted by night. Everywhere appears the evidence of readjustment and reconstruction, old offices and shops giving place to new and larger premises. The map (Fig. 6 facing page 26), shows that expansion from around this centre has been asymmetrical, first to the north and east and recently towards the south. The former was in response to the growth of the cotton industry in the neighbouring towns. Canals and railways followed broadly the stream and river valleys and alongside stream, canal and railway goods' yards, engineering works and various chemical works sprang up. Crowded round the

THE GEOGRAPHY OF MANCHESTER

works, under inevitably bad conditions, lay the houses of the workers, constituting to-day a problem in civic and social welfare difficult to solve (map 7 facing page 32).

The Valleys of the Medlock, Moston Brook, Irk and Irwell form radial zones of hives of industry and crowded populations. The higher lands of sands and gravel separating valley from valley carry middle-class residences linked by trams and buses with the centre of the city. The great extension to the south came only with the twentieth century. Unlike the deeply dissected north, the south is an almost unfeathered plain falling gently to the west. Many minor brooks as the Platt Brook, Fallowfield Brook and Chorlton Brook, carry the drainage reluctantly to the River Mersey. Several roads ran southwards across this plain linking together a number of detached villages. A traveller along one of these roads to-day can see the evidence of three stages of expansion of Manchester in this direction. Many large houses still remain set in their own grounds, the former residences of merchant princes who drove their horse and carriage into town. These are rapidly giving place to residential suburbs round old village nuclei now incorporated within the city limits. The last stage is the filling in of the open spaces between the southern roads by municipal housing schemes, extending from Chorlton in the west to Burnage in the east. The following table shows the growth of Manchester and Salford in the last hundred years ; it should be remembered that a part of the increase in population is accounted for by extension of boundaries.

Census Year	Manchester	Salford	Manchester and Salford
1801	—	—	94,876
1821	—	—	161,635
1831	—	—	237,832
1841	242,983	70,224	313,207
1851	303,382	87,523	390,905
1861	338,722	102,449	441,171
1871	351,189	124,801	475,990
1881	341,414	176,235	517,649
1891*	503,368	198,139	703,507
1901	543,872	220,957	764,829
1911*	714,333	231,380	945,713
1921*	730,307	239,100	969,407
1928	767,530	247,600	1,015,130

*Area extended.

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This southward growth is not entirely unconnected with the development of the Docks and Trafford Park in the south-west. Though the largest docks are in Salford, Salford has no room either for industrial or residential expansion. Trafford Park lies outside both Manchester and Salford but inevitably affects both. The following table shows how adjacent rural areas are becoming populated and a great and single geographical city is rounding to the full.

		POPULATION			
		1881	1921	% Increase	
Stretford	.. ..	19,018	46,535	.. ..	144·6
Urmston	.. ..	2,242	8,297	.. ..	270·0
Irlam	.. ..	3,007	9,471	.. ..	214·9
Eccles	.. ..	21,850	44,242	.. ..	102·4

The genius and foresight which cut the first (Bridgewater) canal; that laid down the first railway and that built the Ship Canal have now the task of welding into a single civic organisation a number of detached administrative limbs which have come to be members one of another. Together they form the great metropolitan city of South-east Lancashire.

Now a metropolitan city should command admiration not only for efficiency in dealing with the business of the region, but also for a sense of beauty and of art expressed in its galleries and libraries, its educational institutions and, in a wider application, in its architecture seen to best advantage in a setting of open squares and broad thoroughfares. The fine classical architecture that distinguished Manchester a century ago has most of it been displaced by larger, though less dignified, buildings of a pseudo-Gothic type; but a new architecture, admirably expressive of its commercial importance, is rapidly transforming the centre of the city. The plans have been approved of a Central Reference Library that will worthily house the fine collections of books and pamphlets that the city has accumulated. A new art gallery on the Piccadilly site will allow a larger number of the city's rich collection of pictures to be on permanent exhibition. In ten years' time, if not now, the external appearance of the centre of the city will correspond with and express its regional function. Meanwhile, the university, the college of technology, the existing art galleries, the libraries, the concerts, and the press not inadequately serve the province and county as well as the city.

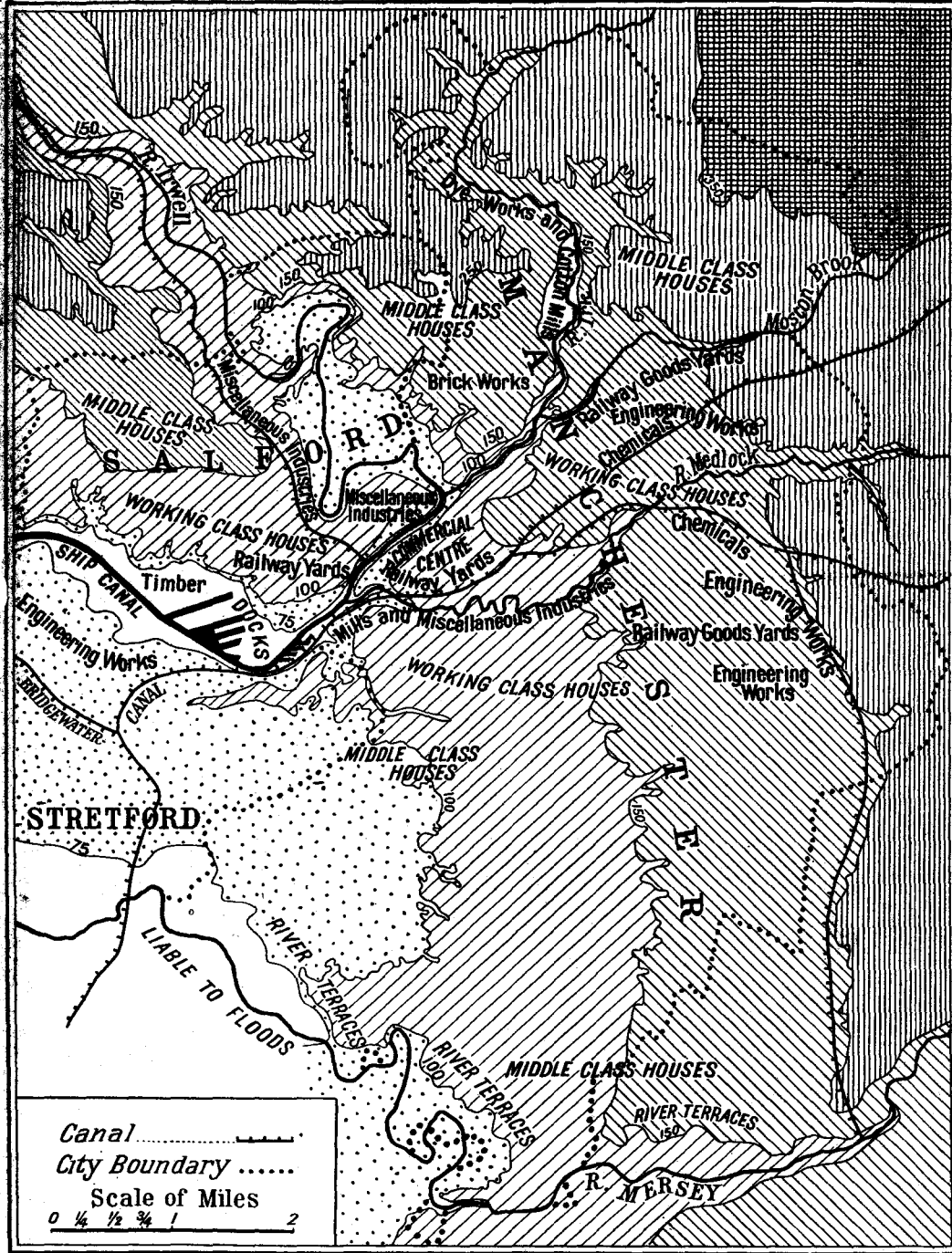


Fig 7. Utilization of the Manchester Area.

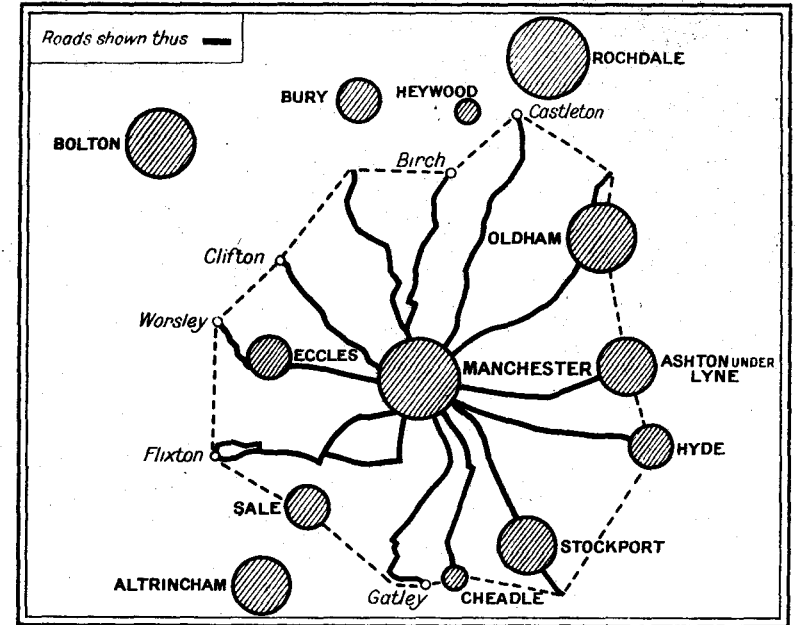


Fig. 8. Motor Transport : Half-hour radius based on local omnibus services.

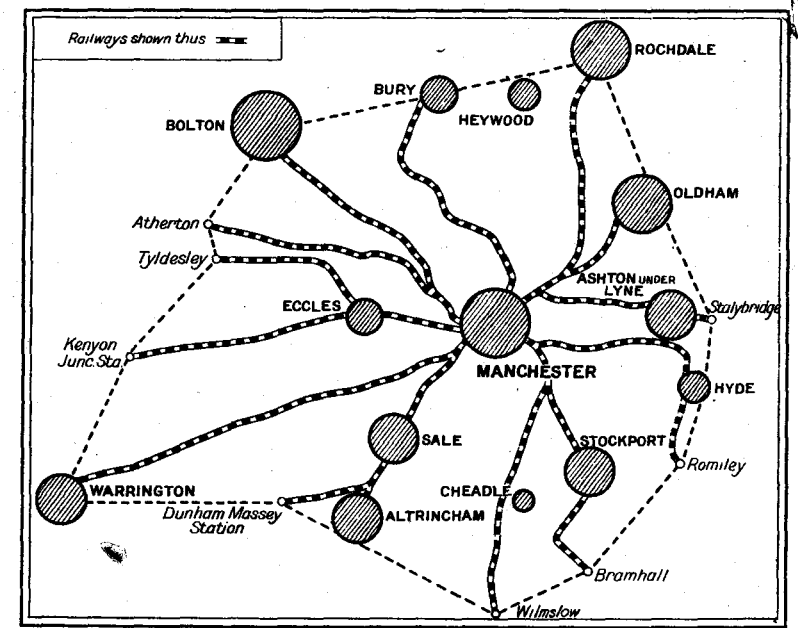


Fig. 9. Railway half-hour radius.

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The citizens of a regional capital must think beyond the administrative boundaries of their city. There should be not only a real endeavour to appreciate the status and dignity of a metropolis, but also a consideration for the welfare of surrounding communities. The functions and enterprise of the City and Port of Manchester are regional, not local.

SECTION III.—COMMUNICATIONS

COMMUNICATIONS form the arteries of commerce and easy transport facilitates the flow of trade. In an industrial province there are two great efficiency tests of the road and railway systems—the adequacy of the internal links and the rapidity with which external regions can be reached.¹ Manchester is well served in both respects. The two Figs. 8 and 9 facing page 32 show for local services the half-hour transport radius from the centre of the city by road and rail respectively. Express services of less than an hour's duration place Manchester in touch with the pleasant towns of Cheshire and the hills and dales of Derbyshire. London itself is but four hours away.

For goods services, the centrality of Manchester is still more emphasised. All roads of South-east Lancashire lead to Manchester and at a recent road census (June 22nd, 1922) it was estimated that the greater part of traffic moving within a twenty-mile radius of Manchester Town Hall entered the commercial centre of the city. Physical and economic forces have combined to produce this radial system of roads, a system which actually made it easier for traffic between surrounding towns to pass via Manchester rather than by a direct route. A change is now in progress. New ring and by-pass roads cut across reconstructed and new radial roads. The old spoke-like system is being replaced by one which may be compared to a spider web (Fig. 10 facing page 34). With the completion of this system traffic will be able to move readily, not only to Manchester but between the towns on the periphery. Road haulage has always been a special feature of the cotton trade. The various processes from raw cotton to manufactured goods are widely distributed over the whole region and many short hauls are necessary to carry cotton from one process to another, the last haul conveying the finished article from the shippers' warehouse to the docks

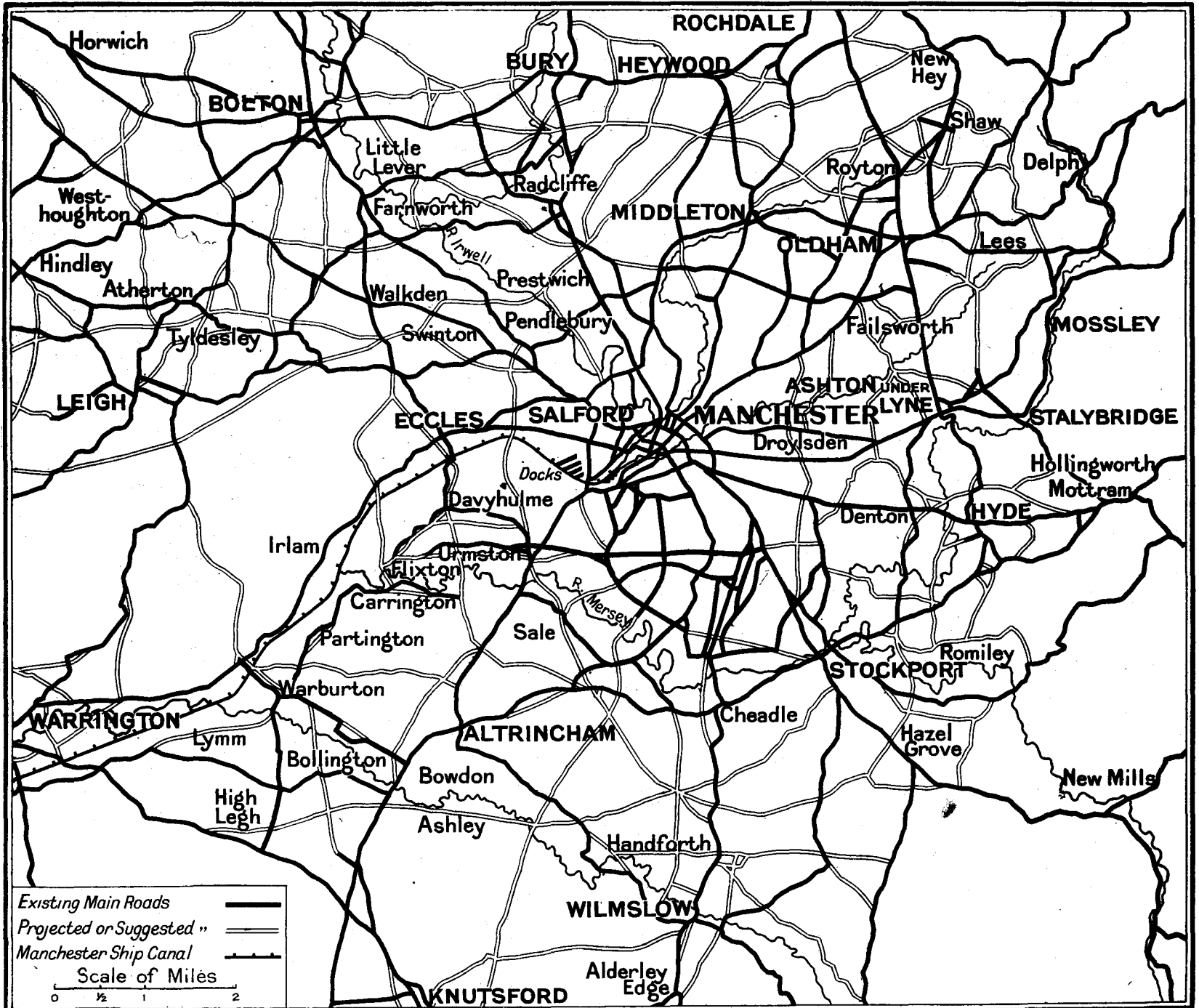
The canals, with the exception of the Bridgewater Canal, are of minor importance in transport and are omitted from this survey.

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The railway system is necessarily more rigid than that of the roads. It has, however, developed with the region and continues to develop, the electrification of the Altrincham line being but the latest form of readjustment to expanding needs. The old "L. and Y"—now part of the L.M.S.—laid down the tracks to serve the needs of Lancashire's prime industries. The ramifications of lines and sidings makes adequate provision for handling inter-urban traffic, for the transport of coal from colliery to works and for the myriad requirements of a complex industrial organisation.

Important as are the internal links of commercial Manchester, the communications with the outside regions are more important still. Round the centre of the city range a number of main line stations, in whose immediate vicinity are extensive sidings and goods yards efficiently equipped for handling traffic. The Ancoats Goods Station covers six acres and has extensive warehouses for the storage of goods for shipment—cotton, cotton goods, yarn and grain. The Ashton Road Goods Station has sidings to accommodate 2,000 waggons; it has large cattle pens and a dock for loading and unloading vehicles on their own wheels. Indeed the railway system is sufficiently extensive to allow specialisation in traffic handling to be adopted. The Salford Goods Depot deals chiefly with textiles, the Oldham Road Goods Depot mainly with fruit and provisions, the London Road Depot handles traffic for London and the south and Liverpool Road Depot, merchandise to and from Liverpool and the north-west of England, Scotland and North Wales. These depots belong to the L.M.S. Railway, but the London and North Eastern Railway has access to the city over its own lines and to the Manchester Docks over those of the Cheshire Lines Committee. The L.N.E.R. not only amplifies the local services of the L.M.S. but it links South-east Lancashire directly with the whole of eastern England, one evidence of which is the heavy tonnage of fruits and vegetables conveyed from Lincolnshire and East Anglia.

The mainline systems of the L.M.S. and L.N.E.R. (Fig. 12 facing page 36) make the nodality of Manchester much more striking and significant. Natural routes and railway engineering skill have in a measure determined general direction. Lines from North Wales, the Midland Gap, the Upper Trent and Derwent Valley converge in the ancient crossings of Warrington and Stockport and so lead on to Manchester. Across the Pennines, the Sheffield region is reached either via the Longdendale



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Fig. 10. Main Road Systems and Projected Developments.

(By courtesy of the Manchester Town Planning Committee.)

THE GEOGRAPHY OF MANCHESTER

Valley, the Woodhead Tunnel and Penistone (L.N.E.R.) or by the Dore and Chinley Line (L.M.S.) Natural features determine communication with the West Riding woolfēn towns across the Pennines, the Tame Valley being connected to the Colne Valley and Huddersfield by the Standedge Tunnel. Further north, the Roch Valley and Walsden Gap lead to Todmorden, the Calder Valley and Sowerby Bridge. To the North, the route lies east of the Rossendale and Bolland hills and west of the Ribble and Lune estuaries, crossing these rivers at Preston and Lancaster respectively.

The communications between Manchester and Liverpool call for special comment. Three railways operate between the two cities, one via Newton-le-Willows (L.M.S. 31½ miles), a second via Atherton or Bolton (L.M.S. 37 miles) and a third via Glazebrook (C.L.C. 34 miles), the express service being in each case about three-quarters-of-an-hour. The motor road from Manchester to Liverpool has hitherto not departed from the track laid down in early times by Nature. The first part, as far as Warrington, runs along the gravel terrace between the Mersey water-meadows and the great mosses of Chat, Glazebrook and Risley. Beyond Warrington, the route aims at the low ridge which approaches Liverpool between the Ditton marshes and the low-lying valley of the Alt. A new motor road has now been sanctioned 120 feet wide which will avoid the "bottle-neck" in Warrington and increase road transport facilities between Manchester and Liverpool.

The Ship Canal (Figs. 16 and 17 facing pages 48 and 50) differs fundamentally from both roads and railways and even from the Bridgewater Canal. All communications constructed before 1894 had this in common that they aimed at facilitating the movement of Manchester goods to or from the quays of Liverpool. It was a bold venture that attempted, with success, to convey the sea to Manchester. On the Thames, Nature provided a sinuous waterway, thirty-five miles as the crow flies, from the Nore Lightship to the Pool of London. For the Mersey, the natural harbour was limited to the steep sided channel where it passed through the sandstone bluffs on which to-day stand Liverpool and Birkenhead. The River Mersey offered little or no facilities for shipment higher up the river. In 1887 man began to transform the unnavigable river into a navigable waterway. Taking the valley of the Irwell-Mersey and using the water supply of both these rivers, a channel was completed in 1894 which compared in length with the Port of London from the sea

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up to the Pool. The Ship Canal has a length of 35 miles and a depth of water of 30 to Stanlow Oil Dock, thence to Manchester a depth of 28 feet. There are 8 docks with $6\frac{1}{2}$ miles of quays, 120 acres of water space and a Dock Estate of over 406 acres. In addition to the trade developed by the port (chapter iii., section ii). the construction of the Canal has changed entirely the geographical and economic values of the lands of southern Lancashire. Of all the changes in land utilisation witnessed in this country during the present century, none is so remarkable as that within the 1,000-acres estate of Trafford Park, which presents a frontage of one mile to the Docks and the Ship Canal. This estate was parkland in 1896, to-day it carries more than 200 industrial undertakings employing 30,000 workers. Moreover, the land adjacent to the Canal throughout its whole length is potentially available for port activities and industrial enterprises. Manchester is no longer merely an inland city. It is an inland port to which direct overseas traffic is being steadily attracted. Deflection of trade from old to new channels is as difficult as turning a river from its accustomed and deep trenched bed. Yet the first ripples of foreign trade have now become streams of commerce flowing definitely to Manchester. Continental Europe, eastern North America (including the "Cotton States") and Mediterranean lands have active and regular import and export trade with Manchester. South Africa and eastern South America contribute regularly to its traffic and ere long, as the current of trade grows, more and more traffic will flow into this ocean depot set in the heart of industrial England.

In estimating the value of Manchester's communications, one fact should not be overlooked. The pioneer spirit which in the interests of trade cut the first (Bridgewater) canal through great physical obstacles, that built the first passenger railway, virtually floating it across the mosses, and in our own time that carried ocean liners through green fields to the very doors of Manchester, this spirit lives on and is one of Manchester's great assets. Even at this moment a new development is taking shape. Aircraft will no doubt add a new and special form of transport to those already in existence and Chat Moss, with its wide and level spaces, has been selected for Manchester's new aerodrome. Topographically, communications rest easily on the land relief, economically they represent far-seeing enterprise which drives steadily towards success.

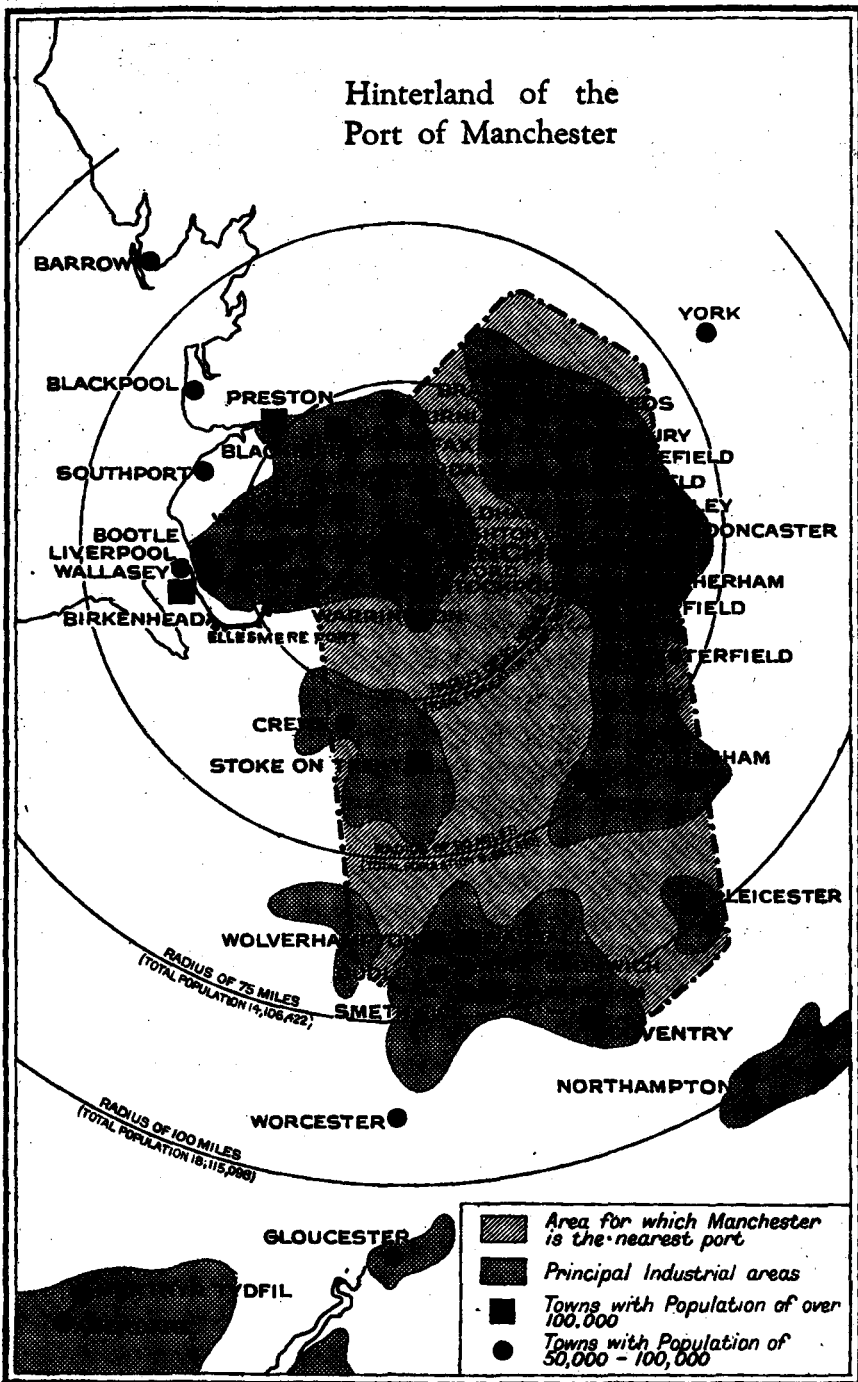
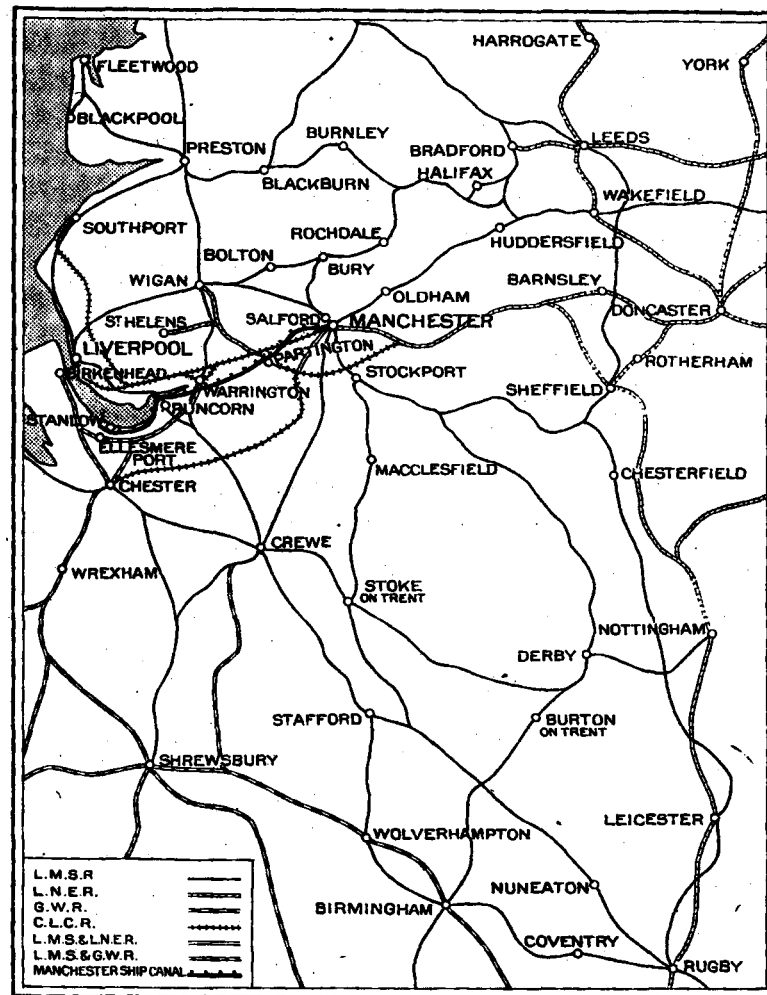


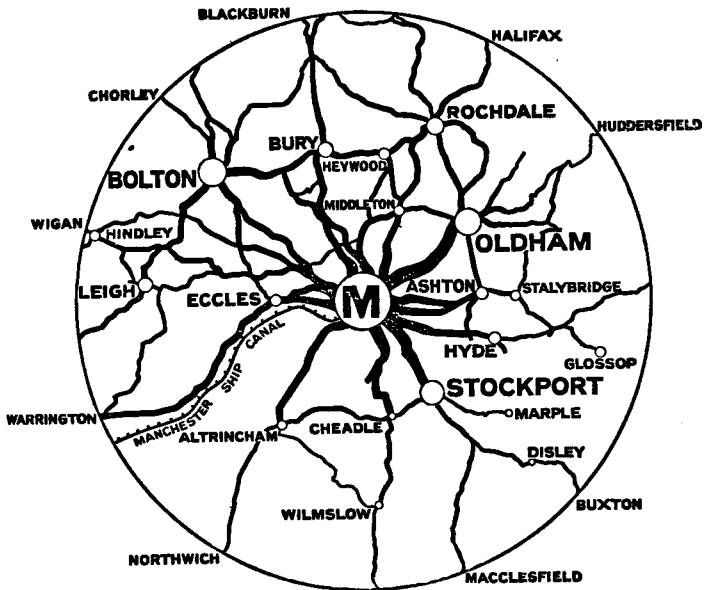
Fig. 11.



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Fig. 12. Rail Connections.

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Radial Roads : Density of Traffic. The relative volume of traffic on the different routes is indicated by the thickness of the line.

(By courtesy of the Manchester Town Planning Committee.)

CHAPTER III.

ECONOMIC RESOURCES

SECTION I.—CLIMATE AND MINERAL DEPOSITS

By W. H. BARKER, M.A.

NATURE does not parade her gifts. They lie skilfully concealed until man has found how they may be used. The bogs and mosses of one age may become the market gardens of the next. The barren uplands of one generation may yield the indispensable water supplies to its successors. The great natural resources¹ of South-east Lancashire at present utilised are water, coal and salt. Their general distribution in the province of Manchester has already been pointed out. Their economic value remains to be considered. Climatically the region has many advantages in its mild equable conditions, its high relative humidity and its surface water supplies. Weather conditions come usually from the west and are often "depressions" with "unsettled" results. Biting, cold north-easters are extremely rare west of the Pennines and on the Manchester plain mild winters are usually experienced. No part of the world *in the same latitude* has so high an average temperature or so equable a climate as the British Isles in general and South Lancashire in particular. During the winter months, the temperature of Britain is 30° F. above the normal for its latitude; in summer it is 2° F. below. The following comparison with some other places in the same latitude is interesting.

	January	July	Range
South Lancashire Plain	40 F.	60 F.	20 F.
Danzig (Baltic Coast)	30 F.	64 F.	34 F.
Kamschatka Coast	5 F.	52 F.	47 F.
Rigolet (Labrador)	7 F.	50 F.	43 F.
Fort Simpson (B. Columbia)..	33 F.	58 F.	25 F.

Our high average in temperature and low range are both of great importance in the general efficiency of our industrial community.

¹ cf. Fig. 2 facing page 25.

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Rainfall

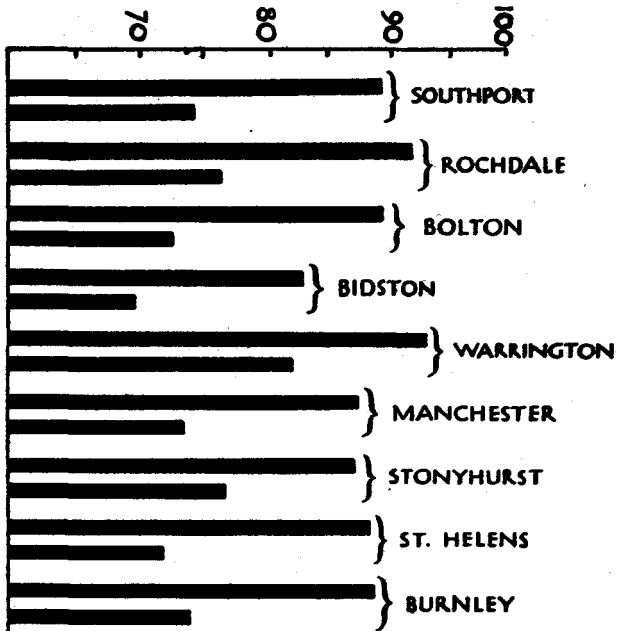
Manchester has a reputation for excessive rain. The annual rainfall is 34 inches, which is little more than that of the greater part of the English plain and considerably less than that of Scotland and western Britain generally.

The rainfall of Lancashire increases steadily from the western limits of the Cheshire plain to summits of the Pennines. Eaton Hall, Dee Valley, registers 26·4 inches, Northwich 29·2 inches, Manchester 34 inches, Bolton 42·4 inches and Belmont 55·3 inches. This may be expressed in another way. If the whole of the Mersey Basin were divided into its contributory drainage areas and the average rainfall from all stations within each area taken, the result would be as follows : (Fig. 13 facing page 42).

Irwell Basin	46·2 inches per annum
Upper Mersey Basin	36·5 " " "
Lower Mersey Basin	30·5 " " "
Weaver Basin	28·8 " " "

The Irwell Basin has clearly a greater rainfall than that of the Weaver Basin by more than 50 per cent. and the Upper Mersey with the headwaters of the Rivers Tame, Etherow and Goyt has one greater by 28·5 per cent. But available surface water bears no fixed relationship to rainfall. The permeability of the soil and rocks, the gradient of the surface and the nature of the vegetation covering affect profoundly the amount of surface water available for the use of man. The consideration of total rainfall is less important than an investigation into run-off so far as the cotton industry is concerned. Industrial and agricultural Lancashire and Cheshire are sharply differentiated by a group of factors affecting water supply. The advantages of the South-east Lancashire uplands over the Cheshire plain may be summarised as follows :

1. The rainfall on the upland is greater than that on the plains.
2. The run-off or surface water of the uplands is greater than that of the plain partly because the more level relief of the plain allows greater permeability and partly because meadow grass and arable crops absorb the equivalent of from 10 to 16 inches of rain, especially in summer.
3. The water of the uplands is generally soft, that of the plain is usually hard.



Graph referred to at foot of page 41.

Maximum and minimum humidities from stations in the Mersey and Ribble Basins. Maximum humidity occurs in the winter season.

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4. The relief of the uplands with innumerable V-shaped valleys makes easily possible the construction of small reservoirs, a task more difficult on the plain.

The map (Fig. 1 facing page 24) shows clearly how predominant a part the Irwell Basin takes in the various processes of bleaching, dyeing and finishing. The works engaged in these activities are found scattered along every stream and in every clough that offers the least possibility of reservoir construction. The landscape is not of extensive factory towns such as those engaged in the spinning and weaving processes, but rather one of small villages in close proximity to isolated works. Population is not concentrated in cities but deploys up the various valleys from the centres of industry.

Relative humidity is no less important than abundance of soft water. It is true that humidifiers may now correct the aberrations or defects of Nature, but even so Man cannot yet beat Nature at her own game. A high relative humidity is general over the whole of Lancashire. Humidity readings in Lancashire are usually taken at 9 a.m. and 9 p.m. Some stations take only one reading at 9 a.m. The observations for Rochdale, Southport, Manchester and Bolton are as follows :

		Rochdale	Southport	Manchester	Bolton
January	.. ..	92·0	88·1	87·7	88·9
February	.. ..	90·8	87·2	83·6	87·3
March	.. ..	87·7	83·7	82·9	86·1
April	.. ..	81·2	78·3	76·3	76·9
May	.. ..	77·5	75·5	73·5	73·4
June	.. ..	76·6	74·4	74·1	72·8
July	.. ..	78·4	77·3	74·2	73·4
August	.. ..	81·9	79·3	77·9	76·9
September	.. ..	84·2	81·6	79·6	81·3
October	.. ..	88·6	85·8	80·4	85·5
November	.. ..	90·0	88·1	85·0	88·1
December	.. ..	91·8	89·3	86·7	89·6

Southport has thus a higher reading than either Manchester or Bolton. The following graph indicates the maximum and minimum relative humidities for nine stations. Here it is evident that Bidston, near Birkenhead, in the Wirral, has the lowest and Warrington the highest. Around Liverpool and stretching from Southport through St. Helens

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to Warrington there would appear to be a belt with an atmosphere at least as humid as that of Bolton or Manchester. Through this region cotton definitely moved inland to the abundant supplies of soft water in the foothill streams of the Pennine Uplands. Warrington alone within this belt has cotton manufactures.

Geology

From Nature's atmospheric gifts we turn to those embedded in the rocks—coal and salt. The Lancashire coalfield, with an area of approximately 200 square miles of exposed coal measures, is roughly triangular in shape, its apex four miles north of Burnley and its base extending between Stalybridge on the east and Prescott on the west. The available resources of the proved coalfield have been estimated at more than 4,000,000,000 tons. It contains some of the deepest workings of the British Isles, those of the Pendleton colliery, near Manchester, reaching a depth of 3,500 feet. The Rossendale uplands of millstone grit separate the Burnley coalfield on the north from the South Lancashire basin. The importance of the coalfield to industry may be gauged from the fact that coal miners numbered 106,862 in the 1921 census and formed 59 per thousand of the males over 12 years of age in the county. The occupation is mainly concentrated in one continuous belt in the southern part of the county, a little over 20 miles from east to west and 10 from north to south extending from Skelmersdale in the west to Swinton and Pendlebury in the east and from Wigan R.D. in the north to St. Helens C.B. and Leigh R.D. in the south. In the whole of this area there is no district with less than a quarter of its male population occupied in coal mining, and outside it no area in the whole county attains this proportion. The population so occupied for the area as a whole is 396 per thousand (1921) and it includes just 75 per cent. of the coalminers in the county.

Fig. 14 (facing page 42) shows how the sandstone of the uplands dips below the rocks containing the coal. The uppermost thick bed of grit or sandstone is known in Lancashire as the "Farewell Rock" because the miners noticed that they could bid farewell to any prospect of finding important coal seams when they reached this bed of grit.

The Coal Measures are the uppermost of the formations of the Carboniferous System which includes the sandstones and the limestones of the Pennines. These coal measures have in Lancashire a thickness about 4,500 feet consisting of sandstones, shales, fire clays and coal

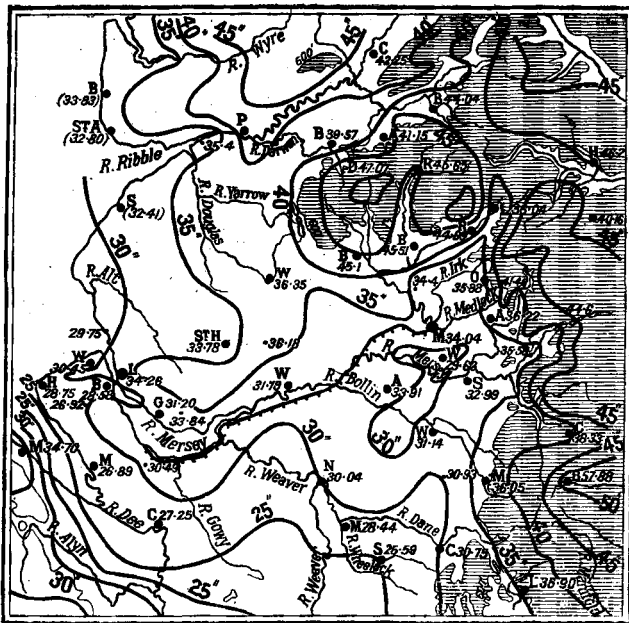


Fig. 13. Rainfall Chart.

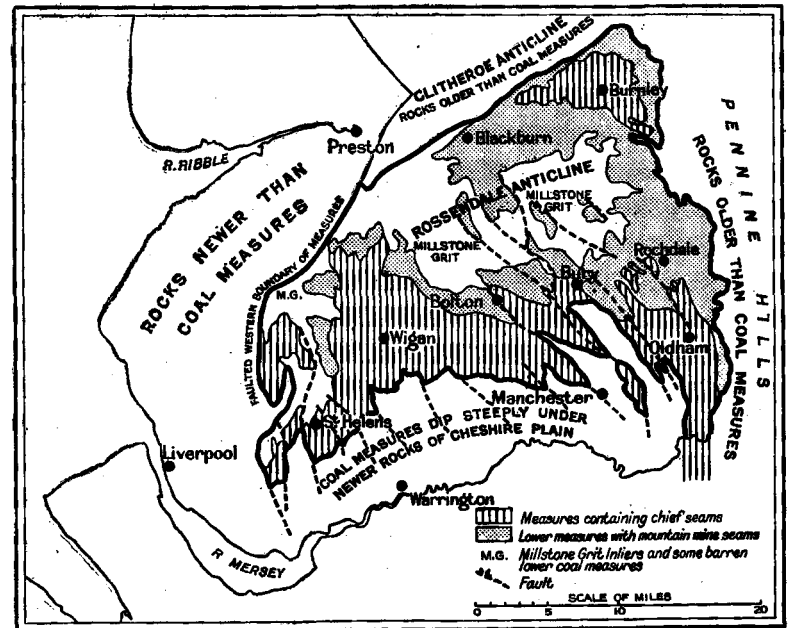


Fig. 14. Lancashire Coal Measures.

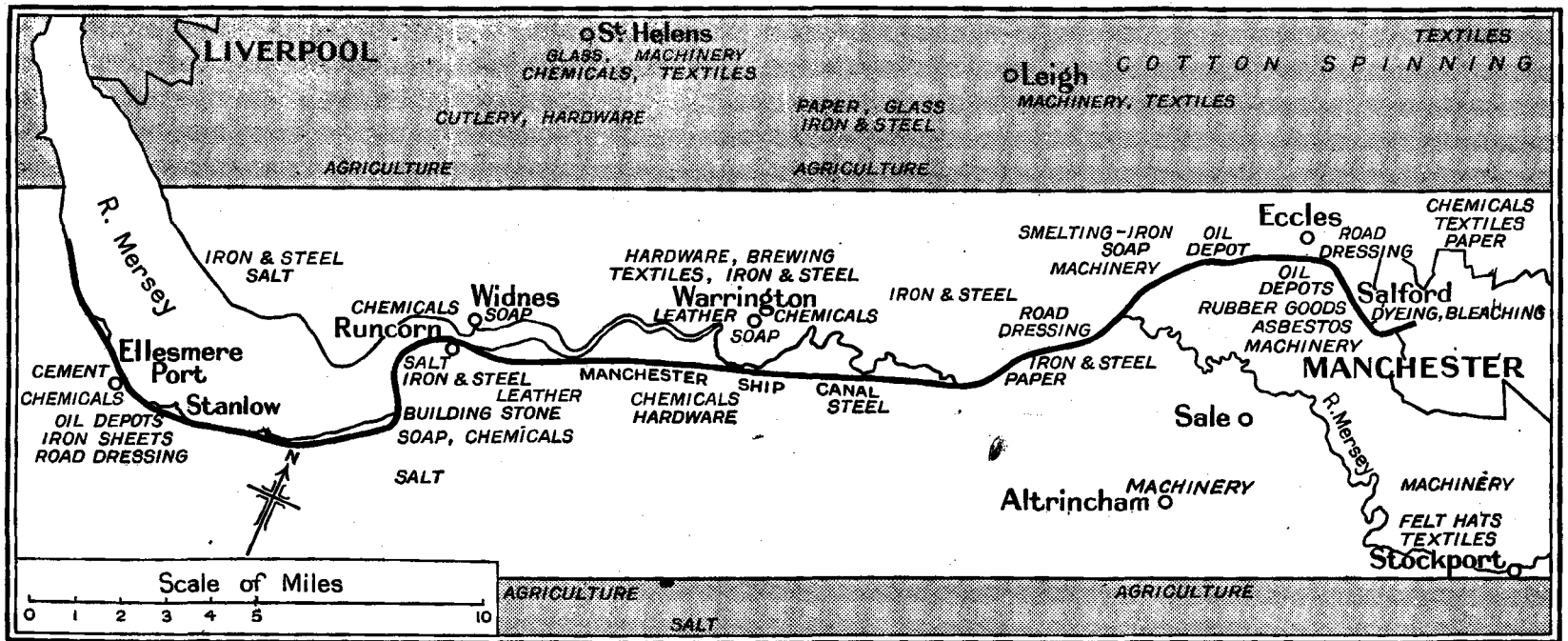


Fig. 15. A New Industrial Zone.

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seams occurring and re-occurring many times in varying thicknesses. Skill in observing the sequence of these rocks in two Manchester collieries enabled an officer of the geological survey recently to indicate the presence of valuable seams hitherto unsuspected. Coal seams vary considerably both in their quality and thickness. Some are too poor or too thin to work. The Lower Mountain Mine, one of the best known, is usually between 3 feet 6 inches and 4 feet 3 inches in thickness. This and the Upper Mountain Mine at the present day are worked around Accrington, Blackburn, Darwen, Bacup and Wigan. They are the chief seams economically and the coal produces locally a good coke but is chiefly got as a manufacturing and household coal in connection with the associated valuable fire clays.

The sandstones of the coal measures often make good building stones and many East Lancashire towns and villages are largely built of them as Colne, Nelson, Burnley, Accrington, Haslingden, Rawten-stall, Bacup, Rochdale and Oldham. The shales of the coal measures are much used for the manufacture of bricks, tiles, sanitary ware, and the fire clay for making fire bricks and retorts.

The actual boundary of the exposed coal measures in the west is formed by a very extensive fault with a throw of over a thousand yards. In the south the jagged outline of the coal measures is due to a number of north-west-south-east faults which divide the coal measures into series of blocks of which the Manchester coal field is one. The carboniferous rocks dip steeply south beneath the New Red Sandstone plain. Over the plains of the west and south geologically recent sands and gravels have been strewed and peat bogs have developed where the soils were waterlogged and heavy. The region forms the farming land of Lancashire and Cheshire—potatoes in the Ormskirk region, milk and cheese from Cheshire and market garden produce everywhere.

We turn now to the second great commodity of the rocks—salt. When, in the long geological past, the triassic rocks were being formed, climatic conditions must have been comparable to those experienced now in the arid lands of Central Asia where evaporation of inland lakes leaves saline incrustations on the shores of the receding waters. The salt deposits of Cheshire are apparently the useful remains of dried-up inland lakes. The deposits are found in two beds each some 100 feet in thickness. They vary in their depth below the present land surface between 200 and 500 feet. The purer deposit is in the lower bed. The salt area extends from a few miles north of Northwich

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southward through Winsford to the neighbourhood of Lawton. Formerly salt was obtained from mines ; to-day production depends almost entirely on brine pumps. From Roman times until the present, salt has been a valuable product. The shipment of salt from Liverpool between 1870 and 1880 when the trade was at its height, was ten million tons, one-quarter going to India and another quarter to ports of North America. The export of salt still continues, especially to India.

Chemical Resources

The great value of salt, however, lies not so much in its general domestic use at home and abroad, important as this is, but in its importance as the basis of the great alkali industries. Alkali is essential for the manufacture of soap, glass, enamel, glazes, porcelain, ultramarine, water-glass, paper, baking powder and many other commodities. Large quantities are used in cleansing processes of all kinds. The present extensive production of cyanide is dependent on supplies of alkali, as is also the extraction of chromium, tungsten and molybdenum from their ores and the manufacture of special steels in which these metals are used. The textile and dye industries are also large users of alkali.

The history of the alkali processes does not here concern us—the older Le Blanc process, the later Solway ammonia process and the more recent electrolytic process. Our chief concern is to note how the industry came to be localised in the neighbourhood of the Mersey and the cotton trade. The chief raw materials required for the Le Blanc industry were salt, coal, limestone and pyrites. Salt could be obtained cheaply and abundantly from the Weaver basin, the River Weaver, canalised in the early eighteenth century, sharing with the Aire and Calder system the distinction of being one of the very few waterways of really heavy traffic in England to-day. Coal could be readily obtained from a ring of coalfields served formerly by canal but now by rail. From the neighbourhood of Buxton and Peak Forest limestone quarries mark the devastation of the hills in the interests of trade. The introduction of pyrites on a large scale came but gradually. At first native sulphur from Sicily was used, later it was found more profitable to import iron pyrites rich in sulphur from Spain. After the extraction of the sulphur an almost pure iron ore was obtained which could be easily disposed of to iron and steel works. For the bringing of these essential commodities of the chemical industry the Ship Canal forms not so much a thoroughfare as a collecting centre. Runcorn and

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Widnes had early facilities for assembling the raw materials—pyrites up the Mersey from Spain, coal from St. Helens by the Sankey Canal and salt from Northwich by the Weaver Navigation. Both were transformed from pretty, sunny riverside hamlets with quiet sleepy ways into large and hastily constructed industrial towns. Here and elsewhere development proceeds apace aided now by railways, motor roads and the Ship Canal and a rural agricultural belt is slowly changing into a prosperous industrial zone. But the times and men of the twentieth century differ from those of the nineteenth century. No longer is it possible for towns to be mere settlements of thousands of workers living in dingy unfinished streets of hastily constructed houses built under the shadow of chimneys belching forth volumes of deleterious gases and clouds of black smoke. We live in an age of regional and town planning and many local authorities are struggling with the problem of clearing up the debris of a hundred busy years and entering on large works of reconstruction without impeding business, in the light of our experience and in accordance with our needs. The task is great and almost hopeless. Only the stern discipline of knowledge of what our cities are and what they may become can bring us to great accomplishment. Great as are the problems of each town within this crowded urban area, their solution obviously depends in part on those of their neighbours and in part on the region as a whole. Unfortunately the western region beyond the Macclesfield-Bolton line intensifies the problems by the steady closing in of industry on the west. This colliery region so intimately connected with South-east Lancashire attaches itself also to the north of the mid-Lancashire industrial zone which extends southwards to Widnes, Runcorn and Warrington and on to Winsford and Northwich in Cheshire. The Mersey mosses now converted into market gardens, and eastern Cheshire with its woods and meres, its farm and residential districts—Sale, Altrincham, Wilmslow—form an invaluable break between the heavy chemical industrial zone and the textile region of South-east Lancashire. There is, however, a potential danger which needs great tact and statesmanship to handle in the best interests of society. Trafford Park and Warrington form outposts of the two industrial zones and set diagonally between them is the Ship Canal, the potential artery of a new industrial zone (Fig. 15 facing page 42). A hundred years of economic growth has provided many lessons. Future generations will decide how wisely we have learned.

MANCHESTER AT WORK

SECTION II.—FACILITIES FOR TRANSPORT

By C. D. CAMPBELL, M.A.

ALTHOUGH it is a mere truism that specialised production would be useless without some system of transporting goods from process to process and to the consumer, an industrial area has much more than a passing concern in the efficiency and development of its channels of communication. As regards the Manchester region, in addition to railways, roads and canals already performing vital functions, it may not be long before regular air communications are established through the proposed municipal aerodrome at Chat Moss. But since, at the present time, the three former must be regarded as of primary importance for the movement of basic manufactures, to these we turn for some knowledge of existing facilities. What is the magnitude and what has been the development of each? For what particular industries do they respectively cater? Their geographical channels and sphere—how do they now stand? These are some of the questions to which, where possible, an answer may be suggested.

Railways

The Railways Act, 1921, among other things, provided for the amalgamation of most of the then existing companies of Great Britain into four large groups. Two of the groups so constituted, i.e., the London Midland and Scottish and London and North Eastern, as well as the Cheshire Lines (joint L.M.S. and L.N.E.) and Ship Canal have termini in Manchester, whilst a third group, the Great Western, has running powers into the city. To speak thus parochially of the railway system, as though the splitting up into separate companies means that communication with all parts of the country is a matter of difficulty, is to give a wrong impression, since for most purposes Manchester may be regarded as in connection with the rest of the country, irrespective of ownership of the permanent way.

Railway transport has been under a cloud during the last few years on account of the combined action of trade depression and motor competition, the respective effects of which cannot in practice be separated. The general public, impressed by the fall in ordinary railway dividends, together with the rapid growth of road motor traffic, has suffered from a rather distorted perspective as to the relative position of the two means of transport. In attempting to suggest a

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rough analysis of conditions in the Manchester district it must be confessed that conjecture plays a large part, since mere traffic figures are no true indication whatever of financial prosperity or otherwise, and nothing more than a few barely local tonnage statistics are available, but reference may usefully be made to the summaries in Tables 1 and 2.

The first gives the total tonnage dealt with on all railways in Manchester during the four years 1925-8, analysed according to the chief types of traffic, and is the only indication of the density of movement in the city itself. The second is less useful and needs careful description. Covering the north-western operating of the L.M.S. the C.L.C. and the Ship Canal, it does not include either other L.M.S. figures or important L.N.E. tonnage. In more detail the L.M.S. statistics relate to "lines north of Chester, embracing late L. and N.W. lines north of Weaver Junction, Sandbach, Macclesfield and Parsley Hay; also late Cleator and Workington Junction; Cocker mouth, Keswick and Penrith; Dearne Valley; Furness; Knott End; Lancashire and Yorkshire; Maryport and Carlisle and Wirral lines"—an area obviously wider than the direct environs of Manchester. Further, in using the statistics of Table 2 for comparing the course of traffic during recent years, two things, among others, limit their accuracy. That which tends to reduce ton-mileage without a corresponding real fall of traffic is the routing of tonnage by alternative shorter routes since amalgamation. That which may increase or decrease it is the transfer of traffic movements from or to other divisional areas and competing lines, with consequent gain or loss for the particular division taken. Allowance being made for the probable magnitude of these forces, the evidence in the two tables hardly confirms the popular impression of a colossal decline in goods traffic. As a qualification the reader may be reminded of the coal strike in 1926, with its resultant fall in traffic figures for that year, and increase in 1927 on account of postponed dispatches. Though there has been a fall since 1921, corresponding to the beginning of trade depression, there is not the slightest doubt that the railway still remains the greatest agent for the movement of goods. Owing, however, to large fixed operating costs, the substantial reductions in rates which have been made, in conjunction with the slight decline in traffic, have had a much more than proportionate effect on net revenue. The recent low ordinary dividends exaggerate the traffic position.

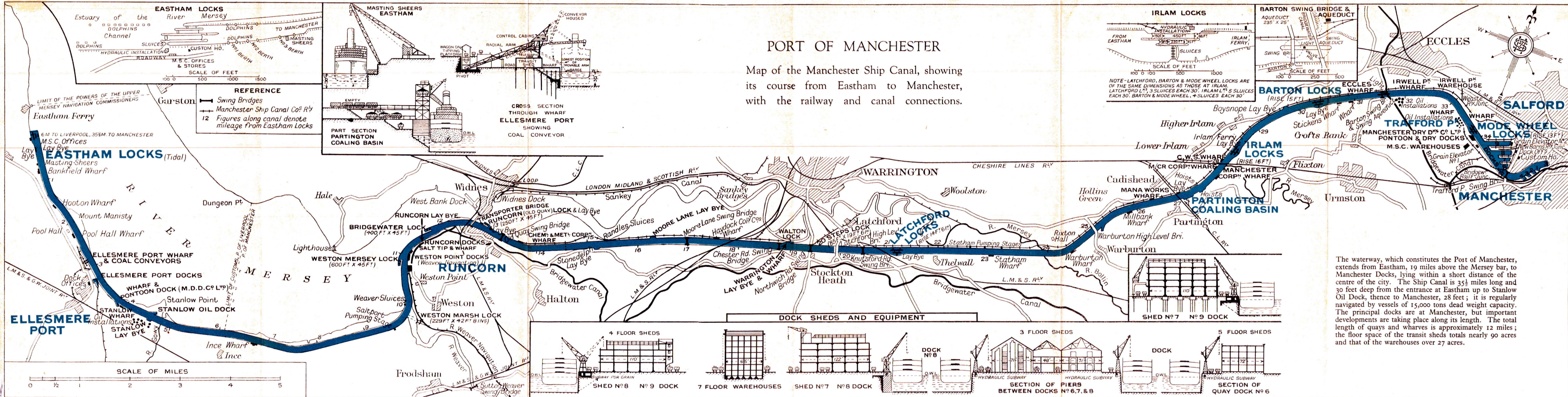
MANCHESTER AT WORK

For what they are worth as a comparison, the totals for Great Britain are given. The possible conclusion therefrom, apart from the fact that the lines in Table 2 account for one-tenth of the whole, is simply to show that the course of ton-mileage on the sample lines is no less steady than on those of the rest of the country.

A characteristic of great importance is the nature of the traffic which passes by rail. The figures of Tables 1 and 2 demonstrate to a degree the large proportion of the total comprised under the head of minerals and coal. In some regions such as Tyneside and South Wales, coal forms an even greater bulk of the total traffic, with the inevitable result that they have suffered much more from the decline in production. A comparison of the coal percentage and fluctuation of total traffic in Great Britain with those in the two Manchester tables will disclose that a fairly substantial general merchandise traffic is to some extent a stabilising factor at the present time. In this it is, on the other hand, that motor competition is more evident. The companies are therefore pursuing a vigorous policy in instituting the "container" method of transport, by which goods are placed in large boxes, easily transferred between wagons and lorries by means of cranes. The advantages claimed for containers are those of door-to-door service, reduction in handling and packing costs, together with a minimum loss on account of damage and theft. The wide variety of goods now successfully passing by the new method includes furniture, confectionery, bricks, flowers, radiators and earthenware, whilst efforts are being made to introduce an insulated meat container. In addition, for small parcels, the "rail head" system of distribution is being developed. As used, for example, by Messrs. Cadbury Brothers at Oldham Road, Manchester, the system works as follows. Large consignments of goods are despatched from works at cheap bulk rates to a rail head depot or warehouse on railway premises, there to await distribution in small lots by rail or road, according to arrangements made at will by the factory or agents. By this system packing costs and breakages are reduced to a low figure; speed is increased, owing to the elimination of transshipment delay when wagons are despatched "through" and to the ease with which local orders can be met; whilst warehouse accommodation is effectively decentralised in a number of depots near the consumer. The use of the road powers, granted to the companies by Parliament in August 1928, is also likely to be of more importance in the case of high-valued smalls.

PORT OF MANCHESTER

Map of the Manchester Ship Canal, showing its course from Eastham to Manchester, with the railway and canal connections.



The waterway, which constitutes the Port of Manchester, extends from Eastham, 19 miles above the Mersey bar, to Manchester Docks, lying within a short distance of the centre of the city. The Ship Canal is 35½ miles long and 30 feet deep from the entrance at Eastham up to Stanlow Oil Dock, thence to Manchester, 28 feet; it is regularly navigated by vessels of 15,000 tons dead weight capacity. The principal docks are at Manchester, but important developments are taking place along its length. The total length of quays and wharves is approximately 12 miles; the floor space of the transit sheds totals nearly 90 acres and that of the warehouses over 27 acres.

Fig. 16

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Closely bearing on the retail nature of transport consignments, the cost of carriage and, to some extent, the greater ease with which motors are able to compete with the railway for general merchandise, is the size of the average wagon and train load. Whilst, of course, "average wagon load" figures given in Table 3 are no real indication, they do give some idea of the use made of wagon capacity. Manifestly, in respect of coal and minerals, the convenience and economy of large lots weigh heavily in the balance for the railways, whereas the small units of general merchandise make road and rail competition much keener. The average train load, dependent to some degree on the nature of the trade, gradients, engine types, etc., appears from Table 3 to be quite up to the standard of Great Britain. Each of these factors is a substantial influence in the cost of railway transport to the extent, roughly, that any increase therein means more economical working, owing to the better use of rolling stock. In no country has this been better realised than in the United States. The suggestion has often been made that a busy area like south-east Lancashire might usefully copy the District Shipper's Boards of that country. Representing both traders and railways, they endeavour to secure good facilities and economical working through mutual discussions of difficulties and forecasting of traffic demand. This need is to some extent met by such bodies as the East and West Lancashire Traders' Panels, organised on much the same lines, but not exercising quite the same functions.

If then one is entitled to draw any inferences from the tables, they point to a modification of the general impression of a local decline in traffic in any way commensurate with the dividends falling to ordinary shareholders, and further to the active efforts of the companies to maintain their supremacy in inland goods transport. That they have failed, during the first year of operation under the standard revenue provisions in the Railways Act, 1921, to make their requisite profits, now means that rates and charges fall for revision by the Railway Rates Tribunal in order, if possible, to attain that end. In many cases it is apparent that motor competition will not allow of rates being raised, with the result that those traffics less subject to competition may have to bear the brunt of the increases. The large amount of cotton passing by road will therefore not be much affected except in so far as non-competitive raw materials are used in the processes of manufacture.

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The Manchester Ship Canal

It will now be unnecessary to remind the reader that Manchester (and for these purposes one must include Runcorn, Ellesmere Port, Partington and Warrington) is one of the foremost ports of the country. This is all the more surprising in view of the fact that her only access to the sea for large vessels is by the artificial cut known as the Manchester Ship Canal. It may be correct enough in an engineering sense to describe this waterway as a canal, but economically, since Manchester looks to the sea, whereas the ordinary barge canal faces landwards, there is less confusion and more justification in regarding it as an elongated harbour or dock.

The Ship Canal is best described by the maps facing pages 48 and 50. In further explanation one may add that it is $35\frac{1}{2}$ miles long, 90 to 180 feet wide at bottom and 28 to 30 feet deep in different places. It has five pairs of locks commodious enough to allow the passage of large sea-going ships up to the city itself, where there are extensive dock facilities covering an area of $406\frac{1}{2}$ acres and equipped with all the apparatus and warehousing accommodation of the modern port. Vessels of 15,000 tons d. w. capacity regularly navigate the canal.

The importance of Manchester as a port for the surrounding economic region lies more in the value of her trade than in the volume of her shipping. In 1927 the criterion of value, measured in total imports and exports, placed her fourth in Great Britain, a long way below London and Liverpool but keenly contesting with Hull for third place. Yet the net tonnage of vessels arriving and departing during the same year was only sufficient to list her number ten, after London, Liverpool, Southampton, Newcastle, Cardiff, Plymouth, Glasgow, Hull and Swansea. Some of these other ports will be recognised for their large low-valued coal traffic, in contrast to the valuable Manchester trade.

The value of Manchester trade is dealt with in the import and export sections of this book, but more can here be said of shipping volume. The total tonnage of toll-paying merchandise passing along the Ship Canal during each of the last five years is given in Table 4. Possibly 1926 should be omitted on account of the heavy coal imports during the strike, but, although there seems to have been a decline since that record year, the traffic can claim on the whole to be well maintained.

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Barge tonnage is clearly local and remains more or less at the same constant level every year, the real importance being in sea-borne traffic. The figures of the number and net tonnage of vessels, as shown in Table 5, besides reflecting the merchandise tonnage trend, give moreover, some idea of the density of traffic. Indeed, these statistics are somewhat consoling when it is realised that trade generally (and traffic at most ports) is still suffering from the post war depression. If industry in Lancashire should improve on its present rather stagnant position the traffic on the Ship Canal should continue to increase, perhaps to such an extent as to call for still further developments of its facilities.

By far the majority of the shipping tonnage is engaged in the foreign trade, as may be gathered from Table 6. Furthermore, the destinations of the vessels are not the same from year to year, since some of them are tramps, content to move all over the world in search of cargoes and to claim no fixed route. There are, however, a large number of regular lines operating at fixed times along specified routes and scheduled in the published sailing list issued by the Canal Company. Nevertheless, since the movements of cargo are more regular than those of vessels, Table 7 and Maps 18 and 19 (facing pages 52 and 54) will indicate at once the wide ramifications of Manchester shipping trade. At the same time, of course, it is almost inevitable that Europe and North America should be the chief channels, on account of their predominance in import and export values as well as their geographical proximity.

This naturally leads one to the rather analogous observation that a port is always a cosmopolitan place. No further proof of the international use of the Ship Canal need be brought forward than is given in Table 8, designed to show in brief the nationalities of the vessels engaged in the foreign trade. It is only to be expected that those of British register should form the bulk, as they seem to do in most of the important international ports in the world, but the Scandinavian and United States figures are considerable.

A feature of some importance, bearing on the level of rates to and from Manchester, is the proportion of shipping arriving and departing in ballast. A casual study of Table 6 prompts the conclusion that a far greater proportion of shipping and tonnage departs than arrives in ballast. This is a regular occurrence, and argues the presumption that Manchester imports a greater volume (as well as value) of goods than

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it exports. Some ports are in the favourable position of enjoying an evenly balanced freight demand, but Manchester is not one of them. Since outward freights are evidently harder for shipowners and charterers to obtain than inward freights, it is not surprising that traders are continually urged to make more use of the Ship Canal for export, to the profit of themselves and the carriers.

Although the canal is capable of taking ships of 15,000 tons dead weight capacity, it will probably have been noticed from Table 6 that the average type of vessel in use is not very large, being, in fact, just over 900 tons net. The type of vessel naturally varies according to the trade in which it plies, but the figure is brought down by the large number of small coasting vessels averaging about 300 tons net, compared with roughly 1,500 tons in the foreign trade. It should not be thought that these figures contrast badly with other ports, nor should unfavourable comparisons be drawn with spectacular 50,000-ton Atlantic passenger liners.

After the shipping, the port authority. The Manchester Ship Canal Company is a statutory body which, in addition to owning the Ship Canal, can claim to be proprietor of the Bridgewater Canals and the Mersey and Irwell Navigations. The Company also possesses 209 miles of railway (reduced to single track), 72 locomotives and 2,382 railway wagons of various types. Add to this 192 road vehicles, 64 horses, 1,011 acres of land (not forming part of the undertaking), and 450 houses, and some idea may be gained of the variety of its business apart from the ship canal and docks.

As at December 31st, 1928, the total authorised capital was £21,573,230, of which £19,573,230 had been issued. The net revenue of the Company was used in paying interest on £9,907,000 loans, £550,000 debentures, £3,999,880 five per cent. preference stock, £1,061,230 Manchester Corporation three-and-a-half preference stock and £3,751,370 ordinary shares of £1 each. The Manchester Corporation fostered the Ship Canal in its darkest days by lending capital, and the £1,061,230 preference stock represents the capitalised value of arrears of interest on Corporation debentures. The City Council appoints eleven directors to the Board, and ten are elected by the shareholders.

From all its undertakings the Company, unlike the proprietors of the small canals, derives a considerable net revenue and shows a sound financial position. In Table 9 is given a brief analysis of the

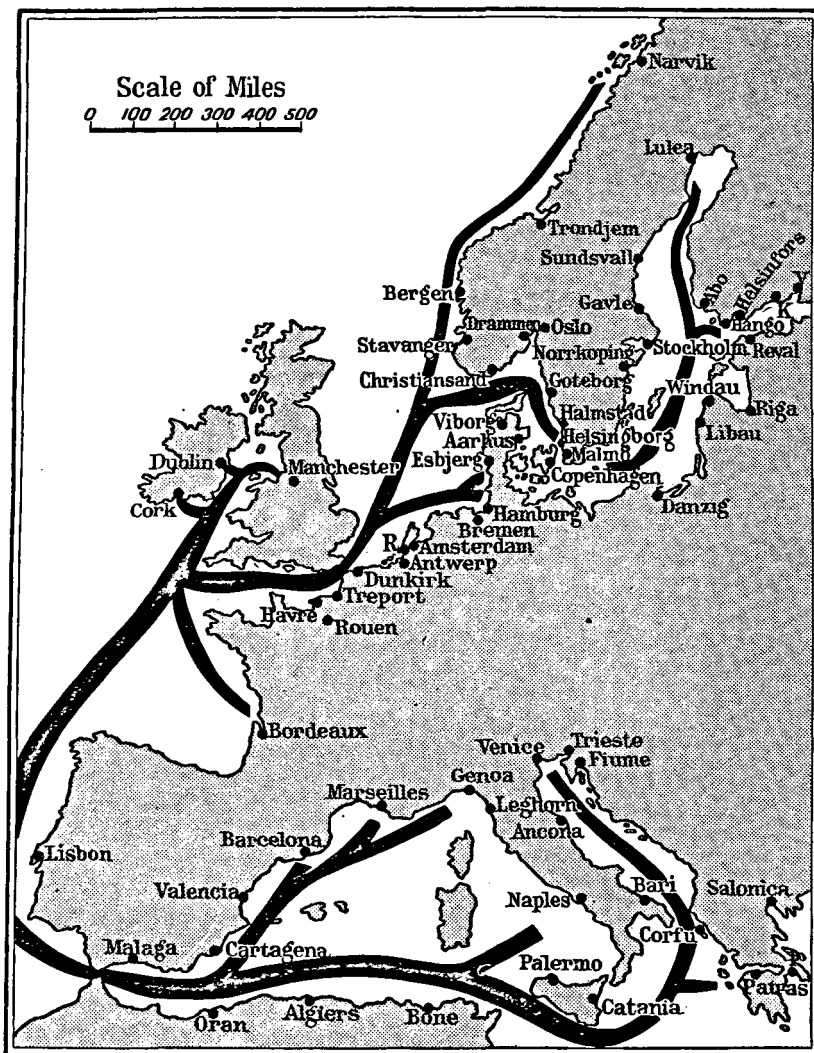


Fig. 18. European Trade Connections of the Port of Manchester.

The main streams of traffic only are indicated and are not extended to include all ports of call.

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general course of development during the last five years, though again caution might be given that the extraordinary record figures of 1926 are due to expanded coal imports during a period when the stoppage of the home mines brought about a decline on the railways and small canals. The fall from five to three-and-a-half per cent. on the ordinary shares for 1928 and in net receipts since 1926 would not encourage if it were not felt that prospects point to a rise in the near future.

Smaller inland canals

Apart from the Ship Canal, the town is the hub from which radiate a number of inland waterways of much smaller capacity, opening up through communication with the whole of the English system in Yorkshire and the South. Of those which run through south-east Lancashire three are owned by independent statutory companies and the remaining five are railway owned. They are of varying dimensions, as shown in Table 10, so that the exchange of through traffic between the larger "barge" canals and the smaller "narrow" canals is considerably restricted.

The Manchester Ship Canal Company, through its Bridgewater Department, is one of the remaining four canal owning companies still engaged in the carrying trade on waterways. The rest of the traffic is largely in the hands of "bye-traders" who specialise in this type of work. As a rule haulage is by either horse or steam, except on the L.N.E. canals, where the latter is not allowed. Naturally the speeds attainable are extremely low, and even under fair conditions the average reached by a narrow boat drawn by one horse is barely 2 m.p.h. loaded and 3 m.p.h. empty.

These small canals have long been regarded as a moribund means of transport, now relegated to the less exciting business of fishing, but, whilst their decline has been going on over a good many years, they still carry a fair amount of traffic. This is evidenced in the statistics of Table 11, showing the total tonnage conveyed on each during four recent years, with comparative Great Britain figures. As already mentioned, special allowance should be made for 1926.

Most of the traffic does not travel far. It is probably a safe generalisation to put the average distance covered by each ton of merchandise at less than a dozen miles. In part due to the short length of the canals themselves, the main explanation, of course, lies in the competition of the railway and road motor for the longer distances.

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The apparent sphere of canal transport is in the movement of heavy low-valued goods, for which regularity rather than speed of supply is the essential. Some indication of the chief types of traffic carried on two Manchester canals may be gathered from the classification of Table 12, from which it may surprise the uninitiated to learn that the proportion of traffic represented by coal is less than on the railways.

Roads

It is a commonplace to-day to speak of the great post war development of road motor transport. Nowhere has it taken such a hold on industry as in south-east Lancashire, yet, at the same time, there can be few non-agricultural areas where horse haulage still holds its own as it does among her close-set warehouses. Nevertheless, the exact amount of increase during recent years is a matter of estimate rather than fact, though some idea can be gained by taking a convenient rough index for Manchester itself in the number of vehicles registered under the Roads Act, 1920. It will be understood, of course, that owing to the extreme mobility of motor transport outside registered vehicles come into the town and that Manchester vehicles work outside, but the figures of Table 13, showing, as they do, a phenomenal development, probably give quite a useful measure of progress in other adjacent towns. Whilst the increase of over 300 per cent. in private vehicles is not equalled by that of commercial goods wagons, which amounted to about 100 per cent., the opportunity should not be allowed to pass of noting how unlike the general trend of the depressed industries the course of both has been. A comparison with similar statistics for Great Britain must not be carried too far. It would be rash, for example, to conclude that Manchester has increased more than the rest of the country for private vehicles and less for commercial goods, because so many outside goods trucks concentrate in the town as they bring traffic to the docks and warehouses.

On the other hand, the decline in horse haulage, universally accepted as a matter of concrete experience, and demonstrated in the small percentages of Table 14, is of some local significance. The horse wagon, though cheaper, in some cases, than the motor to the individual trader, is a potential source of expense to the community in other ways by reason of the fact that it not only carries less for its road space and requires a larger area for manipulation, but also because it holds up faster-moving vehicles on congested traffic regions.

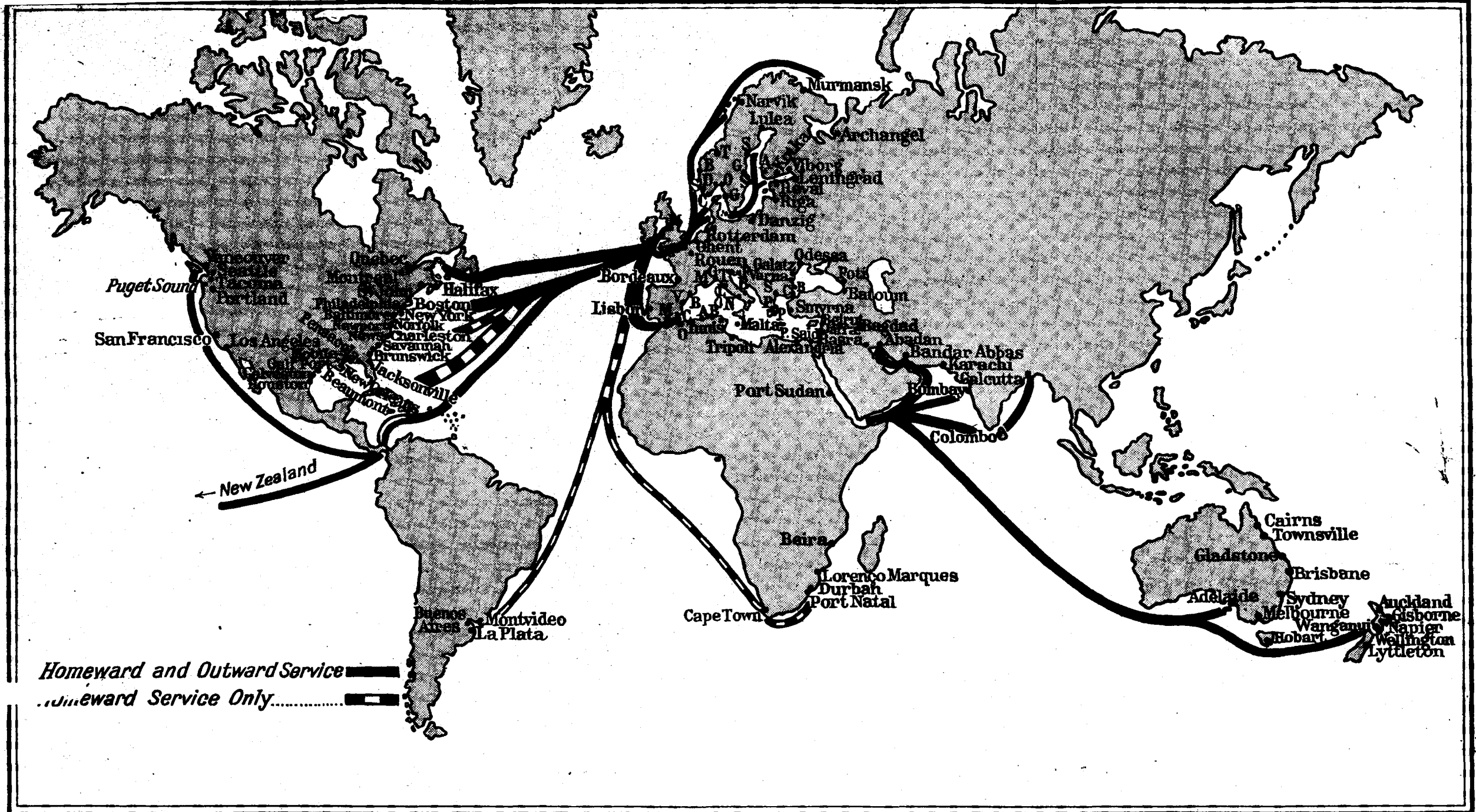


Fig. 19. World Trade Connections of the Port of Manchester.
 The main streams of traffic only are indicated and are not extended to include all ports of call.

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Of the exact density of goods traffic passing over the various roads in the Manchester district really very little is publicly known. It is not enough to take the Ministry of Transport's classification into

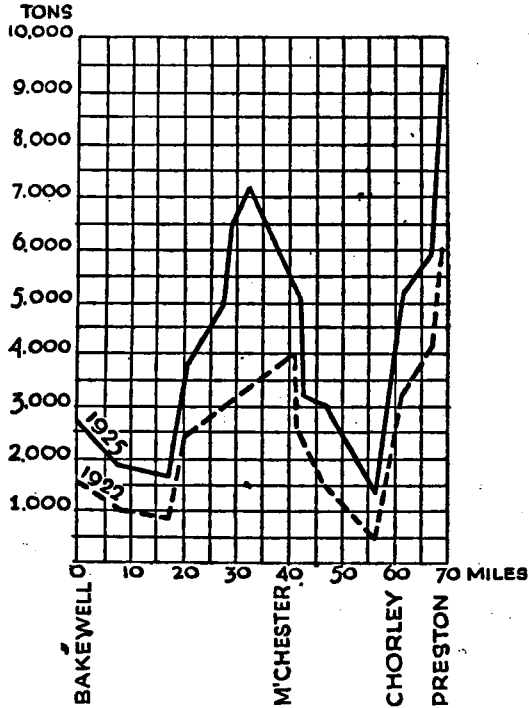


DIAGRAM A.

Road Traffic. Total average daily weight on Route A6, between Bakewell and Preston via Manchester in 1922 and 1925.

Hr

class 1, 2 and other roads as signifying their relative traffic importance, since a number of "other" roads annually bear a very heavy tonnage. All that can be done is to give some idea of the growth on a few, and

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these not necessarily those with the heaviest traffic. Perhaps the best random way of taking a bird's-eye-view of road traffic to and from the Manchester direction is by examining the class 1 roads which run to the four points of the compass, i.e., the A.57 to Liverpool, the A.62 to Leeds and the A.6 (London-Carlisle) through the city between Bakewell and Preston. The last Ministry of Transport Traffic Census in 1925 showed for the east-west roads the rough figures of Table 14 for total traffic at Sankey Bridges, near Warrington (A.57) and the average of six census points on A.62. From these and other statistics it would seem that the Liverpool road is the busier of the two, although regard should be had to the limitations of the figures. Between 1922 and 1925 the Manchester section of the A.6 road between Bakewell and Preston also shows a great increase, the nature and locations of which are brought out in Diagram A.

In the city itself the growth of road traffic, as shown in Table 15, has naturally become even more harassing. It has been said that probably there is more of the heavier types of traffic moving over its central thoroughfares than in any other city in the United Kingdom.

Whilst the main usefulness of canal transport has been diagnosed in the movement of heavy low-valued goods, the reverse is the case with roads. Nobody has ever been able to register statistically the exact nature of the traffic going by motor, but it is a generally accepted fact, based on practical experience, that only light valuable merchandise can afford to pay the higher cost of haulage. For example, raw cotton, a high-valued product, is now known to travel in large quantities from Liverpool to the various mills of the area by road, a state of things which naturally causes the railway companies not a little concern. Further, if the motor cuts in on the short distances, the average range of economical working cannot yet be said to reach far enough for effective competition with the railways over long distances. Of much greater special significance under these generalisations, however, is the fact that trade in the Manchester area is largely in higher valued commodities transported for short journeys between the towns and the docks. This and the added observation that the sphere of motor transport is

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constantly spreading leads one to look for even further local development of merchandise transport for a good number of years. On the other hand, it has been hinted in responsible quarters that there are not wanting speculative indications that the market for private motors is more rapidly nearing saturation point, so that, coinciding with the falling off of the rate of increase of new vehicles, one may conceivably expect a check to the motor manufacturing industry, faced with a demand, not as now for both replacement and great new construction, but largely for the former alone. The organisation of the industry, especially its manner of capitalisation and technical adaptability, will determine the effect of the check.

So far mention has been made only of motor vehicle traffic, its growth, direction and sphere. Road administration calls for a further word. At the time of writing the bodies on whom road responsibility falls are different according as the highways are designated "main" or "district" roads. For main roads the County Councils and County Borough Councils are responsible. District or non-main roads are the concern of County Borough, Borough, Urban and Rural District Councils. The Ministry of Transport has divided all highways into three categories, and on this basis has so far given grants from the Road Fund for construction and maintenance of 50 per cent. for class 1, 25 per cent. for class 2 and 25 per cent. for only such other roads as are "scheduled" on account of heavy traffic. This arrangement is to be altered by the Local Government Act recently passed to the extent that the County Councils will thereby have, in addition, control over all rural roads and all class 1 and 2 roads in Urban Districts and Boroughs, whilst the grants are revised and made more complicated by the operation of the derating scheme.

In Manchester the cost of road maintenance, shown in Table 16, has in no way followed the growth in traffic since 1921. The difference compared with the rest of the country as a whole may be accounted for largely owing to the fall in costs and the fact that it has not been necessary to reconstruct highway surfaces on such a wide scale as in the rural areas.

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Finally, one might ask what preparations, if any, are being made for building new and better roads, by-passes and cut-offs and generally for securing a well-planned system. To dismiss them in few words is not to belittle their importance. It may be said, however, that under the Town Planning Acts a Manchester and District Joint Advisory Committee, representative of no less than 96 local authorities, has made detailed recommendations for co-ordinating road policy over the whole area. These authorities are combined into lesser groups for the purpose of formulating joint regional statutory town-planning schemes in which they, together with the County Council, will no doubt make use of the Committee's suggestions in the endeavour to bring about a systematic and scientific road policy in the future.

TABLE I.

Railways: Total tonnage of Goods and Coal Traffic dealt with at the Manchester City Stations by all Companies during the years 1925-8.

Year	Merchandise, Other Minerals and Live Stock (Tons)	Coal and Coke (Tons)	Total (Tons)
1925	3,387,787	2,041,472	5,429,259
1926	3,021,369	1,673, 844	4,695,213
1927	3,287,403	2,148,643	5,436,046
1928	3,215,856	2,220,866	5,436,722

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TABLE 2.

• Railway Traffic : (millions of ton-miles).

	General Merchandise	Coal, Coke and Patent Fuel	Other Minerals	Total
L.M.S. (Western area-north)				
1924	540·5	720·9	377·8	1,639·2
1925	533·4	714·5	357·7	1,605·6
1926	490·5	501·0	285·8	1,277·3
1927	549·6	751·9	383·4	1,684·9
C.L.C.				
1924	72·9	78·6	49·0	200·5
1925	70·4	84·0	50·5	204·9
1926	66·5	48·0	41·4	155·9
1927	68·1	69·5	55·2	192·8
Ship Canal				
1924	4·3	4·3	4·9	13·5
1925	4·6	3·6	4·6	12·8
1926	4·4	3·6	2·8	10·8
1927	4·8	3·3	4·8	12·9
Total				
1924	617·7	803·8	431·7	1,853·2
1925	608·4	802·1	412·8	1,823·3
1926	561·4	552·6	330·0	1,444·0
1927	622·5	824·7	443·4	1,890·6
Great Britain				
1924	5,535·0	9,903·0	3,624·6	19,062·6
1925	5,542·4	9,315·9	3,473·8	18,332·1
1926	5,148·9	6,104·2	2,788·6	14,041·7
1927	5,693·9	9,470·8	3,682·7	18,847·4

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TABLE 3.

Railways : Average wagon and train loads in 1927.

	Wagon Loads				Train Loads (Tons)
	General Merchandise (Tons)	Coal, Coke and Patent Fuel (Tons)	Other Minerals (Tons)	Total (Tons)	
L.M.S. (W.A.N.)	2·86	8·92	8·73	5·26	138·33
C.L.C.	3·17	9·34	9·15	5·51	120·00
Ship Canal	4·33	8·86	8·11	6·23	87·59
Great Britain	2·96	9·26	8·79	5·60	130·87

TABLE 4.

Manchester Ship Canal : Tonnage of Toll-Paying Merchandise.

	1924	1925	1926	1927	1928
Sea-borne traffic	5,181,615	5,622,405	6,533,780	6,099,636	6,021,316
Barge traffic	253,893	259,286	297,099	259,784	235,579
Total	5,435,508	5,881,691	6,830,879	6,359,420	6,256,895

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TABLE 5.

Port of Manchester: Number and Tonnage (net) of Vessels Arriving and Departing.

	1923	1924	1925	1926	1927
With cargoes					
Vessels ..	5,750	6,134	6,159	5,757	6,465
Tons ..	4,468,380	4,801,403	5,003,871	5,295,153	5,353,331
With cargoes and in ballast.					
Vessels ..	8,627	8,982	9,089	8,654	9,516
Tons ..	7,684,873	6,820,108	7,274,888	8,079,982	7,803,820

TABLE 6.

Port of Manchester: Number and Net Tonnage of Vessels Arriving and Departing in the Foreign and Coasting Trade during 1927.

	Arrived		Departed	
	Vessels	Tons	Vessels	Tons
Foreign Trade				
With cargoes.	1,838	2,796,183	1,541	1,823,831
With cargoes and in ballast.	2,264	3,318,373	1,971	2,885,732
Coasting Trade.				
With cargoes.	1,946	437,538	1,140	295,779
With cargoes and in ballast.	2,496	602,422	2,785	997,293
Total.				
With cargoes.	3,784	3,233,721	2,681	2,119,610
With cargoes and in ballast.	4,760	3,920,795	4,756	3,883,025

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TABLE 7.

Port of Manchester : Number and Net Tonnage of Vessels Arriving and Departing with cargoes from and with cargoes to specific areas in the Foreign Trade during 1927.

Areas	Arrived and Departed	
	Vessels	Tons
N. America (Atlantic coast)	562	1,922,222
N. Europe (Foreign)	1,228	1,131,732
E. Africa, Persian Gulf, India	76	284,328
Australasia	54	264,471
N. America (Pacific coast)	54	223,366
Central and E. Mediterranean	120	211,911
Total	2,094	4,038,030
Other areas, outside United Kingdom, not included above	1,285	581,984
Total	3,379	4,620,014

TABLE 8.

Port of Manchester : Number and Net Tonnage of Vessels engaged in the Foreign Trade, classified according to Nationality for 1927

Nationality	Arrivals and Departures	
	Vessels	Tonnage
British	2,940	4,217,081
U.S.A.	281	970,272
Norwegian	361	375,692
Danish	171	139,106
Swedish	151	121,372
German	113	101,326
Dutch	75	88,856
Others	143	190,400
Total	4,235	6,204,105

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TABLE 9.
Manchester Ship Canal Company : Financial summary.

	1924 (£)	1925 (£)	1926 (£)	1927 (£)	1928 (£)
Net income	857,739	889,273	962,841	947,057	879,644
Appropriation for dividends :—					
1. Interest, rentals, etc	425,569	449,487	459,720	499,748	523,754
2. Preference stock ..	237,137	237,137	237,137	237,137	237,137
3. Ordinary stock					
(No. 9)	187,555	187,561	187,565	186,565	131,298
Rate per cent. do.	5%	5%	5%	5%	3½%
Surplus	7,478	15,088	78,419	22,607	Dr.12,545
Appropriation to reserve	10,000	50,974	80,000	25,000	—
Brought forward from previous years ..	35,451	32,929	33,017	31,436	29,043
Carried forward to subsequent years	32,929	33,017	31,436	29,043	16,498

TABLE 10.
Inland Canals : Physical characteristics.

Canals	Length (miles)	Main line locks (No.)	Maximum size of boat for through navigation on main line (feet and inches)		
			Length	Width	Draught
Bridgewater	40	10	71·11	15·0	4·3
Leeds and Liverpool	145	91	62·0	14·3	4·0
Rochdale	35	92	74·0	14·2	4·0
Ashton, Peak Forest and Macclesfield (L.N.E.R.)	59	46	70·0	7·0	3·3
Huddersfield Narrow (L.M.S.R.)	20	74	70·0	6·11	3·6
Manchester, Bolton and Bury (L.M.S.R.)	15	17	68·0	14·2	3·6

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TABLE II.

Inland Canals : Tonnage conveyed.

Canals	1924	1925	1926	1927
Bridgewater ..	1,306,145	1,283,341	1,090,352	1,273,978
Leeds and Liverpool	1,873,527	1,737,594	1,385,472	1,803,549
Rochdale	162,429	146,047	112,918	100,092
Ashton, Peak Forest and Macclesfield	122,495	101,580	89,744	96,906
Huddersfield Narrow	46,984	42,493	38,233	43,273
Manchester, Bolton and Bury.. ..	274,844	220,092	113,168	199,784
Total	3,786,424	3,531,147	2,829,887	3,517,582
Great Britain ..	21,319,893	20,317,841	17,349,726	20,023,893

TABLE 12.

Bridgewater and Rochdale Canals : Classification of Traffic in 1927.

Commodity	Tons conveyed
Coal, coke, patent fuel and peat	496,492
Building material (other than wood)	31,834
Manures	8,586
Wood	14,287
Machinery	15,632
Raw materials.. .. .	218,366
Industrial products	203,736
Agricultural products and foodstuffs	249,259
Liquids in bulk	108,103
Unclassified	27,433
Total	1,373,728

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TABLE 13.

Number of Private and Commercial Goods Motor Vehicles licensed in Manchester and in use in Great Britain.

Year	Private		Commercial Goods	
	M/C	G.B.	M/C	G.B.
1921	3,951	250,000	3,216	135,000
1922	5,399	315,000	4,237	159,000
1923	6,673	384,000	4,630	181,000
1924	8,395	474,000	5,096	210,000
1925	10,668	580,000	5,694	232,000
1926	12,372	684,000	6,113	260,000
1927	14,140	787,000	6,117	283,000
1928	16,135	885,000	6,405	303,000

TABLE 14.

Traffic on certain Roads in 1922 and 1925.

	A. 57		A. 62			
	Sankey Bridges		Average of six points		Maximum point	
	Tons	Motors	Tons	Motors	Tons	Motors
August, 1922	8,318	97.2%	3,923	96.0%	10,372	93.0%
August, 1925	11,720	97.0%	3,896	91.0%	8,065	94.0%

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TABLE 15.

Traffic on certain Manchester streets in 1922 and 1928.

Street	Daily Tonnage	
	Sept., 1922	Sept., 1928
Piccadilly ..	11,800	18,800*
Oldham Road ..	9,200	16,700
Oxford Street ..	9,300	16,500
Deansgate ..	6,500	13,400

* This is the Piccadilly figure for March, 1928. Owing to repair work on the canal bridge and consequent diversion of traffic, the figure for September (9,100 tons) is not a useful one.

TABLE 16.

Expenditure on maintenance, improvement, cleansing and construction of highways, bridges and ferries.

Year ended March 31st.	Manchester		Great Britain
	Total expenditure, <i>i.e.</i> including loan charges but not expenditure out of loans	Government grants	Total expenditure, <i>i.e.</i> including loan charges but not expenditure out of loans
	£	£	£
1921	528,458	35,728	42,703,879
1922	612,660	24,286	46,161,055
1923	557,524	38,357	45,164,896
1924	541,325	56,922	46,713,831
1925	557,334	62,596	51,763,340
1926	599,221	63,799	55,156,916
1927	653,732	66,266	—
1928	607,474	68,778	—

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TABLE 17.

Direct Sailings from and to Manchester.

AUSTRALIA AND NEW ZEALAND :			
Marwood & Robertson..	..	..	33 Brazennose Street
CANADA:			
QUEBEC, MONTREAL, St. JOHN, N.B.	{	Summer—	
Manchester Liners Ltd.		..	..	St. Ann's Square
HALIFAX, N.S. St. JOHN, N.B.	{	Winter—	
Manchester Liners Ltd.		..	..	St. Ann's Square
UNITED STATES OF AMERICA :			
NEW YORK—			
F. Leyland & Co. Ltd...	..	..	13 St. Ann Street
Herbert Watson & Co. Ltd.	..	..	2 Bank Street
BOSTON—			
F. Leyland & Co. Ltd...	..	..	13 St. Ann Street
Herbert Watson & Co. Ltd.	..	..	2 Bank Street
PHILADELPHIA—			
Manchester Liners Ltd.	..	..	St. Ann Square
F. Leyland & Co. Ltd...	..	..	13 St. Ann Street
H. Watson & Co. Ltd.	..	..	2 Bank Street
BALTIMORE—			
Manchester Liners Ltd.	..	..	St. Ann's Square
Herbert Watson & Co. Ltd.	..	..	2 Bank Street
F. Leyland & Co. Ltd...	..	..	13 St. Ann Street
NORFOLK AND NEWPORT NEWS—			
Manchester Liners Ltd.	..	..	St. Ann's Square
Herbert Watson & Co. Ltd.	..	..	2 Bank Street
F. Leyland & Co. Ltd...	..	..	13 St. Ann Street
CHARLESTON—			
F. Leyland & Co. Ltd...	..	..	13 St. Ann Street
BRUNSWICK—			
Herbert Watson & Co. Ltd.	..	..	2 Bank Street
F. Leyland & Co. Ltd...	..	..	13 St. Ann Street
MOBILE—			
Herbert Watson & Co. Ltd.	..	..	2 Bank Street
F. Leyland & Co. Ltd...	..	..	13 St. Ann Street
NEW ORLEANS—			
F. Leyland & Co. Ltd...	..	..	13 St. Ann Street
Herbert Watson & Co. Ltd.	..	..	2 Bank Street
Harrison Line (J. W. Jones & Sons)	..	..	15 Brazennose Street
WILMINGTON—			
Herbert Watson & Co. Ltd.	2 Bank Street
F. Leyland & Co. Ltd...	13 St. Ann Street

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GALVESTON— (Inwards)	
W. T. Mitchell & Co.	21 York Street
Herbert Watson & Co. Ltd. (also outwards)..	2 Bank Street
F. Leyland & Co. Ltd... .. .	13 St. Ann Street
Harrison Line (J. W. Jones & Sons)	15 Brazennose Street

HOUSTON— (Inwards)	
W. T. Mitchell & Co.	21 York Street
F. Leyland & Co. Ltd... .. .	13 St. Ann Street
Herbert Watson & Co. Ltd. (also outwards)..	2 Bank Street
Harrison Line (J. W. Jones & Sons)	15 Brazennose Street

PENSACOLA—	
Herbert Watson & Co. Ltd.	2 Bank Street

SAVANNAH AND JACKSONVILLE—	
F. Leyland & Co. Ltd... .. .	13 St. Ann Street

PACIFIC COAST VIA PANAMA CANAL :

LOS ANGELES, SAN FRANCISCO, VICTORIA, VAN-
COUVER, SEATTLE, TOCOMA, PORTLAND (OR.),

PUGET SOUND—	
Manchester Liners Ltd.	St. Ann's Square
Sivewright Bacon & Co.	Ship Canal House, King Street

RIVER PLATE :

Manchester Liners Ltd.	St. Ann's Square
--------------------------------	------------------

INDIA :

BOMBAY, KARACHI—	
Anchor Line (Henderson Bros.)	64 Cross Street
City Line (J. W. Jones & Sons)	15 Brazennose Street
Clan Line (E. E. Kynaston & Co.)	4 Albert Square
Hall Line (W. H. Nott & Co.)	7 Brazennose Street

CALCUTTA AND COLOMBO—	
Anchor-Brocklebank Line (Henderson Bros. Ltd.)	64 Cross Street
Harrison Line (J. W. Jones & Sons).. .. .	15 Brazennose Street

PERSIAN GULF PORTS—	
Frank C. Strick & Co. Ltd.	7 Brazennose Street
Gellatly, Hankey & Co.	7 Brazennose Street

EAST AND SOUTH AFRICA :

LOURENCO MARQUES, DELAGOA BAY, BEIRA, CAPETOWN, DURBAN, EAST LONDON—	
Clan Line (E. E. Kynaston & Co.)	4 Albert Square
Harrison Line (J. W. Jones & Sons)	15 Brazennose Street

MEDITERRANEAN, LEVANT, SYRIAN COAST, AND BLACK SEA PORTS :

Gough & Crosthwaite Ltd.	30 Princess Street
Manchester Spanish Line (Herbert Watson & Co. Ltd.)	2 Bank Street
Cunard Steamship Co. Ltd.	98 Mosley Street
Ellerman Line (Ellerman Lines Ltd.)	11 Albert Square

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NORWAY, SWEDEN, DENMARK, AND BALTIC PORTS :

A. Coker & Co. Ltd.	17 Brazennose Street
Ellerman Wilson Line Ltd.	15 Cross Street
Felber, Jucker & Co. Ltd.	29 Peter Street
A. Knudsen	16 Deansgate
R. F. Sanderson & Co. (Steamers) Ltd.	8 Peter Square
W. H. Stott & Co. Ltd.	7 Brazennose Street
Thor Thoresen, Junr. (U.K.) Ltd.	7 Brazennose Street
Herbert Watson & Co. Ltd.	2 Bank Street

CONTINENTAL PORTS :

HAMBURG—

Herbert Watson & Co. Ltd.	2 Bank Street
Vogt & Maguire	20 Brazennose Street

BREMEN—

Herbert Watson & Co. Ltd	2 Bank Street
Vogt & Maguire	20 Brazennose Street

AMSTERDAM—

Wilson, Son & Co.	33 Brazennose Street
British and Foreign Maritime Agencies Ltd...	164 Deansgate

ROTTERDAM—

Wilson, Son & Co.	33 Brazennose Street
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ANTWERP—

J. T. Fletcher & Co.	33 Brazennose Street
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GHENT—

J. T. Fletcher & Co.	33 Brazennose Street
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DUNKIRK—

Wilson, Son & Co.	33 Brazennose Street
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TREPORT—

Leopold Walford Transport Ltd.	Lloyd Bank Bld., King Street
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ROUEN—

Co-operative Wholesale Society Ltd...	111 Corporation St.
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BORDEAUX —

J. & P. Hutchison Ltd.	196 Deansgate
--------------------------------	---------------

SPANISH PORTS :

Herbert Watson & Co. Ltd.	2 Bank Street
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COASTWISE :

BELFAST, DUBLIN, CORK, GLASGOW, GREENOCK,
DUNDEE, ABERDEEN, INVERNESS, KIRKCALDY, LEITH,
STORNOWAY, STROMNESS, NEWCASTLE—

Coast Lines Ltd.	Pomona Docks.
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BELFAST—

J. J. Mack & Sons	28 Queen Street
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LONDON—

Fisher, Renwick & Co. Ltd.	Pomona Docks
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TABLE 18. BRITISH MANUFACTURES.

Comparative statement showing the approximate cost of forwarding the undermentioned goods for shipment at London, Liverpool and Manchester Docks, from the undermentioned manufacturing centres by rail.

From the following Stations	Traffic	Approximate Cost to		
		London	Liverpool	Manchester Docks
		Per Ton s. d.	Per Ton s. d.	Per Ton s. d.
Blackburn ..	Cotton and Linen Goods in bales, boxes, cases packs or trusses	51 4	22 6	20 1
Bolton	" " " "	47 3	19 8	14 8
Manchester ..	" " " "	43 1	17 2S	..
Bradford, Leeds	Woollen, Worsted, and Stuff Goods, in bales, packs or trusses	55 8	34 1	27 1
Huddersfield ..	Yarns, Cotton and Linen, in bales, bags, boxes or skips	55 8	33 8	25 1
Leicester ..	Hosiery, in cases	55 11	54 11	48 6
Nottingham ..	" " " "	59 5	51 5	43 3
Halifax	Machinery, in pts., in c'ses	51 1	32 2	24 9
	" " 5-ton loads	..	20 8	16 9
Oldham	" " 10 tons ..	49 4	13 5	12 9
Oldham ex Platt Bros.' Siding..	" " 10 tons	..	12 1PS	11 6PS
Church	Paper, in bales & bundles	48 6	24 7	20 5
" "	" 2-ton loads ..	38 6	23 1	..
Longport (for Burslem) ..	Earthenware, in casks or crates	48 0	19 3	17 6
" "	Earthenware, 2-ton loads at Owner's Risk ..	45 3	..	..
Denton	Hats, Soft, Felt, in cases or boxes	68 6	39 11	29 6
Sheffield	Iron and Steel List " K. & L " at Owner's Risk	24 11*	20 1S	16 5S
"	" " 2-ton loads	..	18 1S	14 9S
"	" " 4-ton loads	..	18 1S	14 9S
"	" " 10-ton lots for 1 ship	22 3*	14 9S	11 10S

The total cost to London includes collection, except where otherwise stated, within the usual cartage limits, and delivery to alongside ship, railway carriage, Port Rate, Dock Charges.

The total cost to Liverpool includes collection, except where otherwise stated, within the usual cartage limits, railway carriage, delivery to alongside ship and the Mersey Dock and Town Dues.

The through rates to Manchester Docks include collection within the usual cartage limits, except where otherwise stated Railway carriage, and Ship Canal Tolls.

*Not collected at Sheffield. S means from station only. PS means from private siding only.

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TABLE 19. APPLES AND FROZEN MEAT.

Comparative Statement showing the approximate cost of forwarding from ex-ship at London, Liverpool and Manchester Docks, to the undermentioned towns by rail.

To the following Stations	Traffic	Approximate Cost from		
		London	Liverpool	Manchester Docks
		Per ton s d	Per ton s d	Per ton s d
Manchester ..	Apples in boxes	58 6	33 3S	18 2
	" in barrels	55 6	26 10S	12 3
	" in boxes (4-tons)	52 6	28 10S	18 2
Leeds	" in barrels (4-tons)	49 2	22 5S	12 3
	" in boxes	50 1	44 3D	37 2D
	" in barrels	47 1	37 10D	32 3D
Derby	" in boxes (2-tons)	..	38 5D	32 1D
	" in barrels (2-tons)	..	32 0D	27 2D
	" in boxes	51 7	47 2D	40 5D
	" in barrels	48 7	40 9D	35 6D
	" in boxes (2-tons)	41 2	35 1S	30 5S
	" in barrels (2-tons)	38 2	28 8S	25 6S
Sheffield	" in boxes (10-tons)	..	31 9S	29 4S
	" in barrels (10-tons)	..	25 4S	24 5S
	Meat, frozen(3-ton loads)	65 8	48 1D	41 6D
Oldham	" " (2-ton loads)	68 4	50 9D	43 6D
	" " (1-ton loads)	76 8	57 7D	47 6D
	" " (3-ton loads)	67 0	37 3S	28 11S

The cost from London includes the Port Rate, Wharfage and Delivery, and Railway Rate.

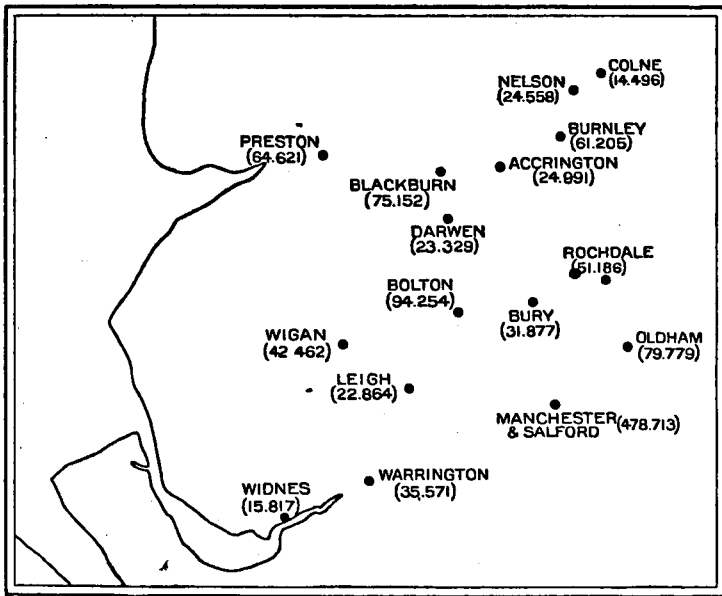
The cost from Liverpool includes the Dock and Town Dues, Master Portorage, Cartage in Liverpool, and Railway Rate.

The cost from Manchester Docks includes the Ship Canal Tolls, Quay Portorage, and Railway Carriage.

D means delivered within the usual cartage limits. S means to station only.

The two preceding tables are reproduced from the 1929 Report of the Manchester Association of Importers and Exporters by courtesy of the Association.

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Fig. 20. Occupied Population in Lancashire Towns.

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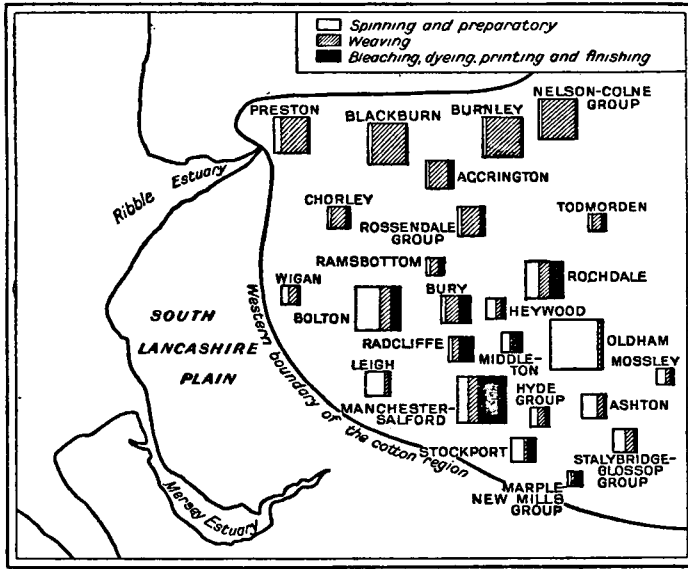


Fig. 21. Distribution of Spindles and Looms in Lancashire.
(By courtesy of the Oxford University Press.)

MANCHESTER AT WORK

SECTION III.—FINANCE

By SIR CHRISTOPHER NEEDHAM

Banking

ONE of the most noteworthy characteristics of Manchester as a centre of commercial and industrial activity is its financial organisation. It is the main banking centre in England outside London, and the only provincial city which possesses several banks having Head Offices within its borders. Manchester has a financial history of which it may be proud. It was the home of some of the famous private banks now merged in larger institutions—Cunliffe Brooks & Co., Loyd Entwisle Bury & Jervis, and Heywood Bros. & Co., to mention only three—and it possesses the oldest joint stock bank in the country, the District Bank, which celebrated its centenary this year. It has also one of the oldest branches of the Bank of England, being one of the three cities in which the first branches were established as a result of the crisis of 1825. The Bank of England is the bankers' bank and the presence of a branch in the city is of the greatest convenience and importance to the banking community. The banks in the city may be divided roughly into three groups. In the first, there are the banks whose Head Offices are in Manchester, viz., District, Williams Deacon's, Manchester and County, and Union, the last named being controlled by Barclays. In the second group there are the banks controlled from London, viz., Midland, Lloyds, Barclays, National Provincial, and Westminster; Martins, which is controlled from Liverpool; and also the National. In the third group are the banks doing overseas business. These include the Anglo-South American Bank Ltd., Bank of London and South America Ltd., Bank of British West Africa Ltd., Ottoman Bank, Barclays Bank (Dominion Colonial and Overseas) and the Comptoir National d'Escompte de Paris.

Manchester does not possess a Money Market, but it is in constant touch with London by means of the private wires which some of the banks have established, and it is therefore fully equipped to deal with financial transactions of every kind, whilst at the same time it retains its own individuality.

It may be asked how it comes about that Manchester has preserved three independent banks, having their chief interests centred in the highly industrialised area to be found within thirty miles of the city (in some cases their activities extend to the neighbouring counties of

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Yorkshire, Cheshire, Staffordshire, Shropshire, Cumberland and Westmorland). The explanation may be found in the sturdy independence of the Lancashire industrialist, who desires to do his business with banks directed by men having special knowledge of local conditions and an understanding of his problems and difficulties.

The industries which are financed from Manchester embrace a wide range, including coal mining, engineering, pottery, agriculture and so on ; but, as would be expected in Lancashire, the financing of the cotton trade in all its various sections from raw cotton to made-up goods, is an important part of the financial activities of the banks. It will be remembered that cotton in its various forms is responsible for 20 per cent. of the total exports of the United Kingdom.

Financing Cotton

The productive side of the cotton industry is chiefly carried out in the towns lying around our city, while the distributive side is dealt with by Manchester itself. Each successive stage of manufacture has its separate problems, and financial arrangements vary almost with each stage. The cotton crop is financed ordinarily by means of bankers' acceptances. In the spinning section of the cotton trade the banker's assistance is usually given by way of overdraft or against the cotton itself, or, in the case of Egyptian cotton, possibly against spinners' acceptances. In these operations the spinner's position is protected by hedging, and the banker must have knowledge of the market in futures. The financing of the weaving of cloth from the yarn also calls for the banker's co-operation.

From the manufacturer the grey cloth passes either through the hands of an agent or direct to the shipping merchant, by whom it is ultimately shipped abroad either in the grey state or after being subjected to the processes of bleaching, dyeing, or printing, etc. The requisite finance for these stages may be roughly divided into two classes :—

- (1) Assistance during the preparation—*i.e.*, the bleaching, dyeing and finishing, and packing of the goods.
- (2) Accommodation during the process of shipment to the overseas buyer.

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The former is supplied by the banks in Manchester, sometimes against the security of the goods themselves, or more usually, upon the general strength of the borrower's position. Finance during shipment is provided, partly by Manchester banks in the shape of open overdraft, negotiation of bills, etc., and partly by the London Merchant Bankers and Acceptance Houses in the form of credits under which the London Houses accept bills, and forward the documents relating to the shipment to their foreign Houses for collection. Out of the proceeds, the bill is met at maturity. Particularly in regard to India and China is this the method of financing textile exports.

When it is remembered that besides the cotton industry itself there are many other trades connected with it—textile machinists, mill furnishers and so forth, it is apparent that the Manchester banker must be equipped with specialised knowledge and have the aid of an organisation adequate to his customers' needs. Banking is, or should be, more than the mere borrowing and lending of money. It involves the closest co-operation with the customer and a solicitude for the customer's welfare. The banker has open to him sources of information which the industrial concern is unable to command. He may by a wise restraint or by a timely encouragement very greatly promote his customers' affairs. It is one of the most satisfactory features in the commercial life of Manchester that this is recognised, and that the banks without exception strive to promote the welfare of those with whom they do business, with corresponding benefit to the trade as a whole.

Foreign Business

The banks of the City are fully equipped for the handling of all kinds of foreign business—whether it be the collection or negotiation of bills, the remittance of funds by draft, cable, or letter of credit, or exchange transactions either "spot" or "forward." During the period immediately following the war, when, owing to the heavy depreciation which took place in the currencies of many countries, business became exceedingly difficult, the facilities which the banks were able to afford in the buying or selling of foreign currency deliverable at a future date did much to preserve a measure of trade. By this means the speculative element was eliminated from the transaction at a time when fluctuations were both rapid and violent.

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The chief currencies have now been placed upon a firm basis and the necessity for facilities in regard to forward exchange are consequently not so great ; nevertheless they are still, in many cases, of great value.

Most of the Banks within the City have acquired the status of a trust corporation, and they offer the fullest facilities for the conduct of all classes of trustee business. The advantages accruing from the appointment of a professional trustee have become more and more apparent to the public on the grounds of security, correct administration, continuity and local convenience, and the services to be obtained in the City are not to be excelled elsewhere. Both private trusteeships and commercial trusts—*e.g.*, Debenture Trusteeships—are undertaken, and there seems little doubt that an ever increasing sphere of usefulness lies before the banks in their fiduciary capacity. It may be noted here that Manchester possesses the advantage of having in the City the office of the Deputy Public Trustee.

In certain recent developments Manchester banking has recognised a new opportunity for service. The scheme of the Exports Credit Department is one under which the shipping merchant may have a portion of his foreign debts guaranteed by the State, and the bankers have willingly given their co-operation in securing the benefits offered.

They have also extended to Agriculture the assistance contemplated under the Agricultural Credits Act of 1926.

Whilst Manchester is primarily an industrial area chiefly occupied with commercial affairs, it is by no means oblivious of the needs of the wider community, and its banks have accomplished much good work in the promotion of thrift. In addition to the chief offices established in the heart of the city, a network of branches has been formed which places a highly organised service at the disposal of every citizen. In greater Manchester we find upwards of two hundred and fifty banking offices, and if the radius be slightly increased, the number would be greatly augmented. New branches are constantly being established, particularly in the communities which have recently sprung into being along the new arterial roads, and most of the joint stock banks have instituted schemes by means of which saving—however small—is encouraged, while the Manchester and Salford Savings Bank, which has a long and successful history, is one of the foremost institutions of its kind in the country. The Co-operative Wholesale Society also possesses a banking department which deals with the financial affairs of its affiliated societies.

MANCHESTER AT WORK

The Clearing House

An institution of which Manchester bankers are rightly proud is the Clearing House, formed many years ago on lines similar to those employed in London, for the cancellation of indebtedness as between bank and bank. Most of our great cities have similar institutions, but Manchester is exceptional in that the area covered by its operations is much larger than that to be found elsewhere. It is not therefore surprising to find that the turnover of the Manchester Clearing House is very much greater than that of any other provincial clearing. The total for the last completed year amounted to £681,000,000; this, it may be noted, representing actual commercial transactions since, as we have said, Manchester does not possess a Money Market and the figures are not swollen by financial transactions, as is the case in London.

Manchester too is distinguished by the fact that it possesses the only independent Bankers' Institute in England outside London. It works in close co-operation with the London organisation, and has had for its Presidents men eminent both in its own area and in the financial world of the metropolis. It affords the fullest facilities for the technical training of its members, the need for highly qualified men becoming more urgent with the progress of industrial development. It works in harmony with the University of Manchester, and many of its members pass on to the University to take a degree in Commerce. The banks afford every facility to enable men to take this course, knowing as they do the value of a trained and efficient mind in dealing with present-day problems.

It may not be inappropriate to show how the deposits of the Manchester Banks have increased during the last eighteen years, and particulars are also given demonstrating the very large growth in the number of offices.

<i>Bank</i>	<i>1910</i>		<i>1928</i>	
	<i>Branches</i>	<i>Deposits</i>	<i>Branches</i>	<i>Deposits</i>
District ..	197	£22,522,000	385	£52,255,000
Williams ..	106	£15,157,000	200	£32,221,000
County ..	103	£ 9,339,000	178	£19,587,000
	<hr/>	<hr/>	<hr/>	<hr/>
	406	£47,018,000	763	£104,063,000
	<hr/>	<hr/>	<hr/>	<hr/>

ECONOMIC RESOURCES

Similar detailed information as to the increase of the number of branches and of deposits in respect of the London controlled banks doing business in the area is not available.

Finally, Manchester may justly claim the possession of an efficient banking service, the value of which can hardly be over-estimated. In the solution of the commercial and industrial problems which the war and post-war conditions have produced, Manchester bankers may be confidently expected to bear an honourable part.

The Stock Exchange

The Manchester Stock Exchange plays a very important part in the financial machinery of the city. The Exchange is housed in a commodious building, which is equipped with modern appliances for handling the large number of daily transactions conducted by its 123 members. The Daily List which the Exchange issues contains quotations of about 1,600 securities. A large number of bargains are completed between the members of the Manchester Stock Exchange in the shares of local and other companies, and in addition the Exchange is in direct communication with London and other Exchanges, so that dealings can be effected promptly by its members in every class of British and Foreign securities.

Insurance

Every kind of insurance can be effected in Manchester. Most of the important Insurance Companies have their own branch offices in the city, and in some cases there are local Boards of Directors. Formerly there were Fire and Accident Insurance Offices with Head Offices in Manchester, but these have all been absorbed by Companies in the main having their Head Offices in London. Lloyd's Underwriters also have their representatives in the city. The outstanding contribution which the city has made in insurance is concerned with Engineering Insurance. This class of insurance originated in Manchester, no doubt due to the fact that the engineering trade was so largely developed in this area. In its first inception it was concerned solely with insurance of steam boilers, but the basis has been considerably widened in the course of time. To-day inspection and insurance is concerned not only with steam boilers, but includes steam, gas and oil engines, electrical machines and plants, lifts, cranes, and all other kinds of mechanical plant in which power is developed or applied. Inspection,

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which is essential to this kind of insurance, is carried out periodically by highly skilled technical inspectors. The great development of Engineering Insurance has been in the hands of the three Manchester Companies, British Engine Boiler and Electrical Insurance Co. Ltd., National Boiler and General Insurance Co. Ltd., and the Vulcan Boiler and General Insurance Co. Ltd. All these Companies have their Head Offices in Manchester. The Manchester Steam Users' Association confines itself to the inspection of steam boilers, combined with an insurance under the form of a guarantee.

Another piece of pioneer work which lies to the credit of Manchester was the founding of the Insurance Institute of Manchester in 1873. As a result of its work the Chartered Insurance Institute was formed, which has provided valuable facilities for the tuition of insurance officials in subjects relating to fire, life, accident, and marine insurance.





CHAPTER IV.

THE INDUSTRIES OF THE MANCHESTER PROVINCE

BY JOHN JEWKES, M.COM.



SECTION I.—GENERAL SURVEY

MANCHESTER is the centre of a compact industrial area which may be broadly considered as covering the whole of industrial Lancashire with the exception of the northern shipbuilding district of Barrow-in-Furness and the great trading centre around Liverpool. The industries in this area have two outstanding characteristics—their concentration and their diversity. This concentration is suggested by the fact that whereas Lancashire contains 13·0 per cent. of the total population of England and Wales it accounts for 14·3 per cent. of the total occupied population. The diversity of industries and occupations can only be fully realised by a study of the tables which follow in this section.

The most comprehensive survey of the economic activity of the county is contained in the Industry and Occupation tables of the Census of Population, 1921. The use of material which was collected eight years ago has its drawbacks, all the more so when the scale and organisation of industry is changing rapidly. The Lancashire area has undoubtedly experienced such change, for whereas the cotton and coal industries have been shrinking in size other industries, particularly road transport, engineering, electrical manufacture and perhaps clothing, appear to have been growing. Nevertheless, the Census figures provide a picture of industrial activity which may be incorrect in detail but is substantially true in its general features. In later sections the post war changes in the distribution and size of some of the more important industries are considered in more detail.

MANCHESTER AT WORK

The Size of the Industries

In Table 1 the distribution of the population between a few large groups of occupations is shown. The area taken is the whole of the county with the exception of Barrow-in-Furness and Liverpool, though the inclusion of these two districts would not appreciably modify the conclusions to be drawn from the table. The textile industry is by far the most important, although as an occupation for men it is only second to the metal industries. Female labour is so predominantly engaged in textiles, however, that in aggregate labour it stands first. The metal industries, including all processes from pig iron production to engineering, are next in importance and transport third. The existence of a coal field in the area gives coal mining and its quarrying the fourth place; but makers of textile goods and articles of dress were almost as numerous in 1921 and may by now have displaced mining. The area therefore consists of three great basic industries—textiles, metal and coal—around and between which is spread a thick network of subsidiary industries, dealing with the distribution, transport, finishing and elaborating of the output of the main industries and even threatening to surpass them in importance.

The diversity of industry is so great that the groupings of Table 1 fail to reveal the existence of many industries which exist in the county on a large scale but which are not usually recognised as Lancashire industries. In Table 2, a list of all those industries is given which, in 1921, contained more than 5,000 workers, showing the relation of each industry within the county to the whole of that industry in England and Wales and the relation between men and women employed in each industry. In certain important cases industries which are closely connected have been grouped together. Such groupings are given in italics and include some industries for which separate figures are given. In this case the area "Lancashire and parts of Cheshire and Derbyshire" as defined in the 1921 Census has been taken. It was felt that the extensions of the cotton and textile finishing industries which exist in the borders of these two neighbouring counties were so much an integral part of the main body of Lancashire industry that it is impossible logically to exclude them in any general survey. Industries, however, which owe their importance to the special activities of Liverpool and Barrow-in-Furness, such as Shipbuilding, have been excluded.

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TABLE I.

Occupational Distribution of Workers in Lancashire,* 1921.

Occupation	Males	Females	Total	% of total occupied in county†
Textile Workers	182,196	315,605	497,801	24·1
Metal Workers (not Electro Plate or Precious Metals)	184,049	6,620	190,669	9·2
Employed in Transport and Communications	135,909	6,480	142,389	6·9
Commercial, Finance and Insurance Occupations (not Clerks)	117,537	55,471	173,008	8·3
Mining and Quarrying	110,320	2,391	112,711	5·4
Makers of Textile Goods and Articles of Dress	28,659	67,740	96,399	4·6
Workers in Wood and Furniture Builders, Bricklayers, Stone and Slate Workers, Contractors	51,045	2,263	53,308	2·5
Makers of Food, Drink, Tobacco	45,058	308	45,366	2·1
Makers and workers in Paper (Printers, Book Binders, Photographers)	16,489	13,070	29,559	1·4
Electrical Apparatus makers, Fitters, Electricians	18,236	12,111	30,347	1·4
Painters and Decorators	18,477	3,087	21,564	1·0
Workers in Chemical Processes (Makers of Paints and Oils)	17,473	301	17,774	·9
Makers of Bricks, Pottery, Glass	9,748	1,937	11,685	·6
	10,877	1,806	12,683	·6
Total Occupied (12 years and over)	1,341,195	719,526	2,060,721	

* Excluding Liverpool and Barrow-in-Furness. Lancashire Administrative County with Associated County Boroughs. No occupation included with less than 10,000 workers.

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TABLE 2.
Industries* in " Lancashire and Parts of Cheshire and Derbyshire "
Employing more than 5,000 operatives in 1921.

(1) Industry	(2) Males	(3) Females	(4) Total	(5) Total England and Wales	% of (4) to (5)
<i>All Industries</i>	1,689,059	903,589	2,592,648	17,178,050	17
Coalmining	121,442	2,901	124,343	1,132,668	11
Manufacture of Bricks, Tiles, Fire Clay Goods	5,211	380	5,591	57,396	10
Manufacture of Glass (other than Bottles) ..	9,244	1,844	11,088	26,418	42
<i>Manufacture of Chemicals</i>	20,537	3,841	24,378	85,243	28
Manufacture of Alkalis and Heavy Acids ..	9,271	393	9,664	26,197	37
Manufacture of Soap, Candles, Glycerine ..	11,507	6,688	18,189	32,051	57
<i>Primary Iron and Steel Processes¹</i>	31,679	1,538	33,217	355,394	9
Puddling Furnaces and Iron Rolling Mills ..	5,326	94	5,422	26,181	20
Steel Works and Steel Rolling	8,965	198	9,163	150,368	6
Manufacture of Wire, Wire Netting, Wire Rope	8,083	990	9,073	23,437	39
<i>Engineering² (Not marine or electrical)</i>	128,545	7,717	136,262	529,826	26
Manufacture of Stationary Engines and Power Transmission Plant ..	7,044	383	7,427	25,277	29
Manufacture of Steam Loco, Road and Rail, Railway Plant	14,834	257	15,091	82,787	18
Manufacture of Textile Machinery and Acces- sories	46,684	3,035	49,719	75,500	66
Manufacture of Machine Tools	5,688	353	6,041	19,709	30
Other Engineering (not marine or electrical) ..	51,736	3,524	54,260	279,011	19

* Excluding Agriculture, Defense, Central and Civic Government, Local Government, Personal Service.

¹ Including Pig Iron Manufacture, Iron and Steel Rolling Mills, Iron and Steel Foundries, Galvanised Sheets, Tubes, Wire.

² Including manufacture of stationary engines and power transmission plant; steam loco, road and rail and railway plant, agricultural engineering, textile machinery and accessories; heating and ventilating engineering; machine tools; other engineering.

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(1) Industry	(2) Males	(3) Females	(4) Total	(5) Total England and Wales	% of (4) to (5)
<i>Electrical Installation : man- ufacture of Electric Cables and Apparatus</i>	30,162	8,141	38,303	165,828	23
Manufacture of Generators, Motors, Transformers, Switchgear	11,653	2,242	13,895	40,335	34
Manufacture of Electric Cables, Wire and Flex	7,085	2,556	9,641	34,709	28
Building Rolling Stock for Railways and Tramways	11,879	373	12,252	73,378	17
Manufacture of Self Pro- pelled vehicles (not steam) and Cycles	20,360	1,283	21,643	189,086	11
<i>Cotton</i>					
Cotton Carding, Spinning, Doubling and Thread Mills	81,334	100,675	182,009	209,964	87
Cotton Weaving	118,834	227,368	346,202	377,971	92
Wool Manufacture (Spinning and subsequent processes)	4,197	3,966	8,193	111,155	7
Textile Bleaching, Print- ing, Dyeing, Finishing	42,848	10,775	53,623	96,908	55
Tanning, Currying and Leather Dressing ..	5,666	980	6,646	30,903	21
<i>Manufacture of Clothing¹</i>					
Tailoring (including water- proofs, leathery clothing)	39,275	75,103	114,378	805,678	14
Dress and Blouse Making	18,210	29,677	47,887	288,200	17
Manufacture of Felt Hats	406	15,834	16,240	150,446	11
Manufacture of Boots, Shoes and Slippers, (not rubber)	4,934	3,640	8,574	10,814	80
	10,760	3,213	13,973	195,237	7

¹ Including tailoring, manufacture of dresses and blouses, shirts, collars and overalls, stays and corsets, underclothing, handkerchiefs, scarves and ties, millinery, straw hats, cloth hats and caps, felt hats, gloves, boots and shoes, and other articles of clothing.

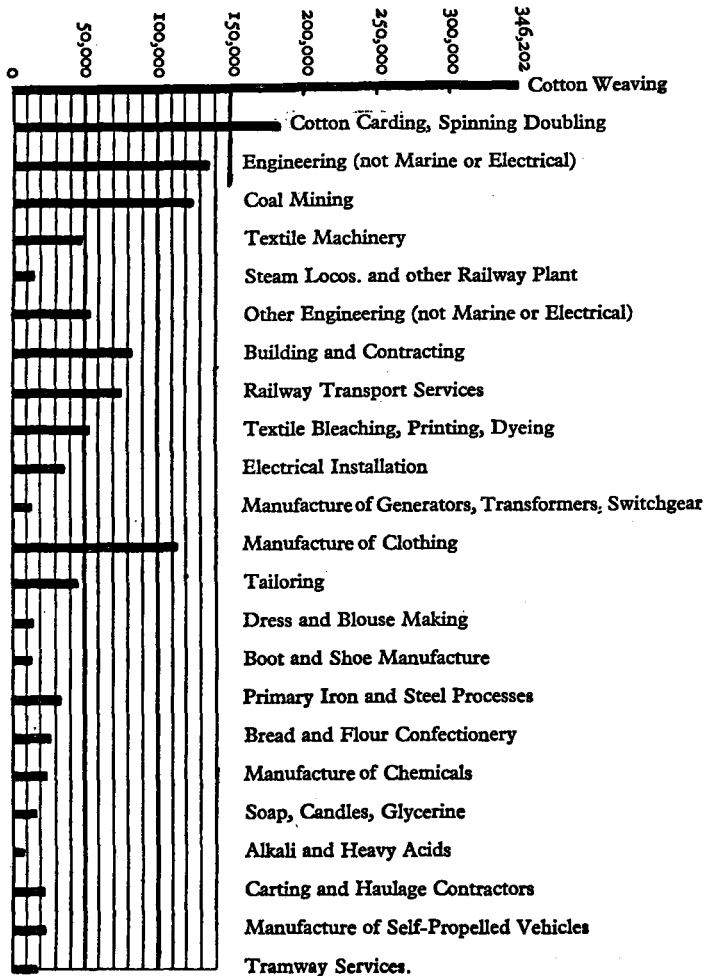
MANCHESTER AT WORK

(1) Industry	(2) Males	(3) Females	(4) Total	(5) Total England and Wales	% of (4) to (5)
<i>Food</i>					
Grain Milling.. . . .	7,454	1,211	8,665	44,475	19
Making Bread and Flour Confectionery	12,874	15,087	27,961	142,251	20
Beer Breweries	8,496	1,646	10,142	71,300	14
<i>Saw Mills and Joinery Works dealing in Timber</i>					
Cabinet and Furniture Making, Upholstery ..	9,371	714	10,085	79,915	13
Paper and Board Making Production of Newspapers and Periodicals	8,190	884	9,074	79,267	11
Job and General Letter Printing	8,324	2,055	10,379	43,088	24
Building and Contracting Manufacture of Tyres and other Rubber Goods ..	6,216	1,218	7,437	56,488	13
Manufacture of Lino ; Leather Cloth, Oil Cloth	9,573	5,870	15,443	119,877	13
Gas Works	81,238	1,446	82,684	720,670	11
Electricity Supply .. .	9,138	5,931	15,069	44,967	33
Railway Transport Services	4,089	1,822	5,911	9,218	64
	13,218	272	13,490	103,088	13
	6,539	163	6,702	38,918	17
	73,771	2,912	76,683	548,673	14
<i>Road Transport</i>					
Motor Garage, Livery Stables, Hiring Estab- lishments	5,739	226	5,965	60,147	10
Carting and Haulage Con- tractors	20,638	583	21,221	128,856	16
Tramway Services.. . .	17,734	653	18,387	76,406	24

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CHART I.

Number of Persons in Industries in "Lancashire and Parts of Derbyshire and Cheshire," 1921.



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The table reveals one marked peculiarity of Lancashire industry ; the widespread use of female labour. It also brings out very clearly that the metal industries in the district are not so much those engaged in the primary processes such as pig-iron manufacture and rolling of steel and iron as those engaged in the subsequent use of the metal in engineering and constructional work. The large industries in Lancashire contain a high proportion of the total operatives in these industries in the whole country, the figures being for cotton weaving, 92 per cent. ; cotton spinning, 87 per cent. ; the finishing industries, 55 per cent. ; textile machinery, 66 per cent. Other industries, however, have an importance, both relatively and in the aggregate, which is often not attributed to them. The manufacture of articles of dress absorbed over 114,000 workers in 1921. About 40 per cent. of the whole of the operatives engaged in the production of glass, other than bottles, are found in this district, principally around St. Helens, and more than a quarter of those producing generators, transformers and switchgear for the electrical industry. Other industries, which whilst small in themselves are concentrated in Lancashire, are the manufacture of tyres and other rubber goods ; alkali and heavy acids ; and felt hats, largely produced in Stockport.

Distributive Services

Neither is it commonly understood what a substantial proportion of the working population is engaged in the retail or wholesale distribution of raw materials, semi-manufacture goods or finished articles. Table 3 shows the importance in this area of those engaged in the distribution of textile goods and clothing and in the retail distribution of food and other products. It is only to be expected that in most branches of wholesale and retail distribution the proportion of those engaged in this area to the total engaged in the whole of the United Kingdom should be about average ; that is about equal to the proportion between the total engaged in all industries in Lancashire and the total engaged in all industries in the United Kingdom. This is the case for coal, retail provisions and general dealing. On the other hand, retail milk, meat, metal, drapery, boot, furniture and stationery dealing are below the average, whilst wholesale grocery, metal and tool, textile and clothing dealing are above the average, a fact which the area's staple industries fully explains.

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TABLE 3.

Workers in Important Distributive Trades, 1921.

(1) Industry	(2) Males	(3) Females	(4) Total	(5) Total England and Wales	% of (4) to (5)
Dealing in Coal	11,373	651	12,024	72,737	17
Dealing in Sugar, Confectionery, Retail	1,358	4,537	5,895	40,914	14
Dealing in Grocery and Provisions, Wholesale	5,914	2,204	8,118	36,223	22
Dealing in Grocery and Provisions, Retail	20,562	12,760	33,322	224,241	15
Dealing in Milk and Dairy Products, Retail	4,009	1,670	5,679	55,462	10
Dealing in Meat, Retail ..	12,203	2,339	14,542	110,412	13
Dealing in Vegetables and Fruit, Retail	6,489	4,342	10,831	64,869	17
Dealing in Drugs and Druggist Sundries, Retail	3,726	1,695	5,421	43,034	13
Dealing in Drysaltery, Oils and Colours, Wholesale	3,838	847	4,685	28,558	16
Dealing in Metal, Metal Goods and Tools, Wholesale	5,615	1,129	6,744	30,419	22
Dealing in Metal, Metal Goods and Tools, Retail	3,809	1,653	5,462	43,303	13
Dealing in Textiles and Clothing, Wholesale ..	24,910	6,295	31,205	91,755	34
Dealing in Drapery, Hosiery, Haberdashery, Hats and Millinery, Retail	9,664	19,905	29,569	250,858	12
Dealing in Boots and Shoes, Retail	2,686	2,370	5,056	38,646	13
Dealing in Furniture ..	4,436	1,409	5,845	46,664	13
Dealing in Books, Newspapers, Stationery ..	4,092	3,216	7,308	54,456	13
General Export Trade and Non-Textile Packing ..	16,994	5,491	22,485	81,333	28
Departmental Stores, General Shops and like mixed businesses ..	20,543	12,011	32,554	189,924	17
Insurance	14,003	4,642	18,645	121,849	

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The Location of Industries

The occupied population in this area forms two great bands of high density, running east and west and tilted slightly north and south. In the more southerly of these belts Manchester is the point of greatest density, surrounded by Salford, Oldham, Bolton and Bury and continued eastward in the mining area, Warrington and St. Helens. In the northern belt the great cotton weaving centres are grouped along the flanks of the Ribble Valley as far as Colne. Between these two belts the Rossendale Fells form a spur pointing to the sea and the towns become of smaller industrial importance. Table 4 shows the occupied population in the most important urban areas.

TABLE 4.

Occupied Population in Certain Urban Areas in Lancashire, 1921.

		Males	Females	Total
Blackburn	C.B... ..	41,736	33,416	75,152
Bolton	C.B... ..	60,699	33,555	94,254
Burnley	C.B... ..	35,154	26,051	61,205
Bury	C.B... ..	19,510	12,367	31,877
Manchester	C.B... ..	237,951	126,001	363,952
Oldham	C.B... ..	50,184	29,595	79,779
Preston	C.B... ..	37,952	26,669	64,621
Rochdale	C.B... ..	31,665	19,521	51,186
Salford	C.B... ..	75,982	38,779	114,761
Warrington	C.B... ..	25,778	9,793	35,571
Wigan	C.B... ..	29,855	12,607	42,462
Accrington	M.B... ..	15,362	9,629	24,991
Chorley	M.B... ..	10,054	6,943	16,997
Colne	M.B... ..	8,675	5,821	14,496
Darwen	M.B... ..	12,858	10,471	23,329
Leigh	M.B... ..	15,678	7,186	22,864
Nelson	M.B... ..	14,512	10,046	24,558
Widnes	M.B... ..	13,045	2,772	15,817

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The industries themselves are grouped in a very complex arrangement. The only clue we can give to the maze is that whereas the cotton industry and coalmining are largely outside Manchester and that textile engineering is found in the great textile centres the remaining industries are usually centred in Manchester. Certain industries, such as the distributive trades, are naturally spread throughout the district. The cotton industry is widely extended but the different processes are largely confined to separate areas. The spinning industry consists of two contiguous groups curved around the north and east of Manchester. The larger group finds its centre in Oldham and the smaller in Bolton. Weaving is concentrated further north in a long line of towns parallel to and slightly south of the Ribble Valley. Between these two lies a district of "mixed" textiles—neither distinctively spinning nor weaving—sending a southward projection between the two spinning sub-groups. Coalmining, on the other hand, is concentrated mainly in a continuous area in the south of the county, a little under 20 miles from east to west and 10 miles from north to south, extending from Skelmersdale in the west to Swinton in the east and from Wigan in the north to Leigh and St. Helens in the south. The metal industries are also fairly widely spread, though here again there is some localisation according to product. The important centres for the production of textile machinery are in Oldham, Manchester, Bolton, Rochdale and Blackburn. Manchester is the principal locality for the finishing trades, the construction of electrical equipment, tailoring, dressmaking and wire manufacture, though in the latter Warrington also is important. Glass manufacture is definitely localised in and around St. Helens.

SECTION II—THE COTTON INDUSTRY.

The cotton industry of the United Kingdom is primarily a Lancashire industry, for the 1921 Census showed that 85 per cent. of the whole of the operatives were to be found in this county and the adjoining fringes of Derbyshire and Cheshire. A few figures must quickly reveal the importance of this great spinning and weaving district in the world economy. In 1928 Worrall's directory gives 60,000,000 spindles in the Lancashire cotton area, which is about 35 per cent. of the total spindles in the world. The number of looms,

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following the same authority, is 755,000, which compares favourably with the figures for U.S.A. (760,000) and for Japan (241,000). It is perhaps unnecessary to state that there are many different types of looms and spindles and that, from one country to another, the loom or the spindle represents something different in the way of potential output of manufactured goods and of capacity to employ labour ; but even when such differences have been fully allowed for it still remains true that Lancashire has about one third of the world's machinery devoted to the production of cotton yarn and cloth.

Output

The task of measuring the physical output of any industry is surrounded by difficulties because of the variety of goods produced and the absence of any ideal unit of measurement. In the cotton industry, however, such difficulties are not great enough to prevent some calculations being made with a degree of accuracy which produces useful and reliable results. The output of cloth, indeed, cannot be measured satisfactorily, for whether a unit of length or a weight must be adopted, the wide range in quality and character of the cloths turned out in Lancashire robs a composite figure of all meaning. An estimate of the total weight of yarn produced by the industry is largely free of such defects, but even here it must be realised that 1 lb. of the coarsest American yarn is something quite different, in value and labour employed, from 1 lb. of the finest Egyptian yarn. With these qualifications, which are probably not very serious when comparing adjacent years, Table 5 is given.

TABLE 5.

Estimated Production of Yarn in U.K. in millions of lbs.

1920	1512
1921	971
1922	1368
1923	1230
1924	1352
1925	1492
1926	1296
1927	1494

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In order to give some idea of the relative importance of the different sections of the industry and the degree to which value is added to the imported raw cotton the following approximate balance sheet of the industry is given for the year 1924.

	£ m.	£m.
Cost of Raw Cotton	120	
Value of Yarn Produced	170	
Value added by Spinning processes		50
Value of Yarn and Cloth Sold at home or abroad	265	
Value added by Weaving, Finishing, Merchanting, etc.		95

A calculation of this sort must necessarily be very rough. It is based upon the assumptions that 70 per cent of the yarn produced in 1924 was exported in one form or another and that the cloth and yarn sold in England was of the same value and quality as that exported. And the relative size of the different items in such a balance sheet will vary from year to year with the fairly wide fluctuations which occur in the price of cotton. Nevertheless, such an estimate is sufficiently accurate to generalise that in 1924, which was a normal post-war year, the cost of raw cotton was slightly less than one-half the value of the finished product; that more was added after spinning than by the spinning processes, and that the value added by weaving and the subsequent operations of finishing and marketing was about three-quarters of the value of the original raw cotton.

Distribution.

It has already been remarked that the cotton industry is found widely spread over the county, but that this dispersion goes along with localization by process. Table 6 gives the number of persons engaged in the large urban areas. It shows the great importance of such centres as Oldham, Blackburn, Burnley and Bolton; the relative insignificance of the city of Manchester as a producer of cotton manufactures and the degree to which women workers outnumber men in the northern weaving areas.

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TABLE 6.

No. of Persons engaged in Cotton Manufacturing Industry in Certain Urban Areas of Lancashire, 1921.

		Males	Females	Total
Ashton-u.-Lyne M.B. ..		2,863	3,937	6,800
Blackburn C.B. ..		12,642	24,241	36,883
Bolton C.B. ..		13,687	18,851	32,538
Burnley C.B. ..		11,681	19,471	31,152
Bury C.B. ..		3,070	6,503	9,573
Leigh M.B. ..		2,303	4,596	6,899
Manchester, City of	C.B. ..	8,937	11,369	20,306
Oldham	C.B. ..	13,152	17,221	30,373
Preston	C.B. ..	7,323	16,278	23,601
Rochdale	C.B. ..	8,171	10,903	19,074
Salford	C.B. ..	2,010	5,693	7,703
Wigan	C.B. ..	1,130	6,231	7,361
Total—Lancashire ..		185,012	299,675	484,687

The cotton industry is, however, particularly associated with the smaller towns in the county and the rural districts surrounding the larger towns. Tables 7 and 8 are based upon the figures given in Worrall's Textile Directory and they give a more detailed idea of the importance of the spinning and weaving areas.

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TABLE 7.

Chief Spinning Areas in Lancashire, 1928.

Towns with outlying districts possessing more than 1,000,000 spindles.

Town	No. of Spindles (Mule, Ring & Doubling) (000's)	% of Total
Oldham	17,613	29
Bolton	7,948	13
Manchester	4,133	7
Rochdale	3,922	6
Leigh	3,306	5
Stockport	2,645	4
Ashton-u.-Lyne	2,063	3
Preston	1,998	3
Farnworth	1,529	2
Mossley	1,311	2
Middleton	1,256	2
Wigan	1,166	2
Blackburn	1,097	2
Stalybridge	1,154	2
Heywood	1,122	2
Bury	1,023	2
Total (including other centres) ..	60,356	100

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TABLE 8.
Chief Weaving Areas in Lancashire, 1928.
(Towns with outlying districts containing more than 13,000 looms.)

Town	No. of Looms	% of Total
Burnley	101,900	13
Blackburn	93,200	12
Preston	68,600	9
Nelson	55,700	7
Accrington	37,800	5
Darwen	38,300	5
Chorley	27,400	4
Colne	26,400	4
Bolton	25,700	3
Manchester	22,600	3
Bury	18,200	2
Gt. Harwood	17,800	2
Rochdale	15,400	2
Todmorden	14,900	2
Glossop	14,200	2
Haslingden	14,000	2
Oldham	13,600	2
Total (including other centres) ..	754,940	100

The Oldham and Bolton districts easily stand out as the predominant spinning areas for cotton. Together they contain about 40 per cent. of the total spindles recorded in the county. Only five other districts have more than 2,000,000 spindles, with Manchester at the head of them. In the table showing the distribution of looms, the important towns are not found high up in the list of spinning centres. No district in the weaving area surpasses all others as does Oldham in the spinning

Specialization.

The localization and specialization in this industry shows itself in many different forms. The most definite division is the geographical separation of the spinning and weaving processes and that is reflected

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in, and is the outcome of, a technical separation of these processes which makes the "mixed firm" unusual. Beyond this there is a geographical separation of coarse and fine spinning which corresponds roughly to the areas using American and Egyptian raw cotton, and which is matched, but perhaps to a less degree, by the separation of the production of fine and coarse goods in the weaving area. These different forms are dealt with in detail below.

(i). The Geographical Separation of Spinning and Weaving.

If the cotton area be divided into a north and south section by drawing a line east and west through Rochdale, including this town itself in the southern area, it can be seen that this form of specialization has gone on to a very advanced stage.

TABLE 9.

Percentage Distribution of Spindles and Looms in the Lancashire Cotton Industry, 1928.

	North	South	Total
Looms	73	27	100
Spindles	12	88	100

This peculiarity in distribution, although the beginnings of it date back to the middle of the nineteenth century, has never been satisfactorily explained. In the past it has been usual to attribute it to the fact that the north has a more humid climate than the south and is, therefore, better suited for weaving. But recent research has shown that there is no evidence, in the available figures of humidity, to support this contention. Whatever the reason for this geographical separation it has continued up to recent times as the following Table 10 reveals.

TABLE 10.

Percentage Distribution of Spindles and Looms in the Lancashire Cotton Industry, 1884 and 1911.

Year	North		South	
	Spindles	Looms	Spindles	Looms
1884	22	62	78	38
1911	12	73	88	27

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This layout of the industry involves a further peculiarity of the Lancashire cotton industry : the carrying out of spinning and weaving by separate plants owned by different firms. In most other countries, and among them some of our most dangerous competitors, spinning and weaving are largely carried on together by the same firm within the same works. In Lancashire the "mixed" firm is the exception and it appears to have become more and more rare in the last forty years, though since 1920 there has been some movement towards the formation of vertical firms which cover the whole of the processes from weaving to merchanting. In 1925 the position was as follows.

TABLE II.

Percentage Distribution of Firms in Lancashire Cotton Industry.

Firms	% of Total
Spinning only	37
Weaving only	50
Spinning and Weaving ..	13
Total	100

(ii). Fine and Coarse Spinning.

It has already been pointed out that the bulk of the fine spinning is carried out in and around Bolton whilst the chief centre for the production of coarse yarn is around Oldham. There is no definite line of demarcation between fine and coarse spinning since Lancashire produces different types of yarn showing a continuous gradation from the lowest to the highest "counts." Generally speaking, however, the distinction can be made according to the type of cotton used since Egyptian long staple cotton is employed in the higher counts and American medium and short staple in the lower. In such a classification it must, however, be remembered that high counts, i.e., yarn with a great length per lb., may be spun from American cotton of the best quality and some very low counts from Egyptian cotton.

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The relative size and importance of these two sections of the spinning industry can be shown in a variety of ways. Thus the 1924 Census of Production showed that, in that year, more than 70 per cent. of the yarn spun was below 40's counts and would most of it be spun from American cotton.

TABLE 12.

Single Yarn Production in U.K., 1924. Classified according to Counts—millions of lbs.

	Amount	% of Total
Up to 40's Counts ..	1,009	73
40's-80's	310	23
80's-120's	56	4
120's and upwards	4	—
Total	1,379	100

So, too, the American spinning section is larger than the Egyptian in the machinery it possesses and the volume in value of cotton consumed. On July 3rd, 1928, the International Cotton Bulletin shows that, of 57,000,000 spinning spindles in Great Britain only 19,000,000 were spinning Egyptian cotton though it must be remembered that whereas many of the American spindles were permanently or temporarily closed down the majority of these in the Egyptian section were working at full time. When one considers this question from the point of view of cotton consumed the position, naturally, alters from year to year, the most important fluctuating element being the relative prices of American and Egyptian cotton. Thus in 1923, a year of high American and low Egyptian prices, the imports of cotton from Egypt were more than half those from U.S.A. In 1925 when the price position was reversed the Egyptian imports were only one-quarter of the American. In a normal year, when Egyptian cotton is at a premium of about 70 per cent. over American cotton, then the imports of American appear to exceed the Egyptian rather more than three times.

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TABLE 13.

Imports of Raw Cotton into U.K. from Egypt and U.S.A. in millions of lbs.

Year	(1) Egypt	(2) U.S.A.	% (1) of (2)
1923	349	669	52
1924	345	949	37
1925	305	1,226	25
1926	314	1,070	34
1927	316	919	29

When allowance is made for the greater value of Egyptian cotton, however, a different position is revealed. In the years 1923-27 the value of the imports of Egyptian cotton were about half, and sometimes more than that of American cotton imports.

TABLE 14.

Value of Raw Cotton Imported into U.K. from Egypt and U.S.A.—
£m's.

Year	(1) Egypt	(2) U.S.A.	% (1) of (2)
	£m's	£m's	
1923	26·4	48·1	55
1924	31·7	67·3	47
1925	28·6	71·7	40
1926	20·2	45·2	45
1927	17·7	33·4	53

To summarize : Over two-thirds of the yarn produced in a normal post-war year is of coarse or medium counts. The Egyptian section is responsible for only one-third of the cotton consumed by weight and

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rather less than one-half by value. One out of every three spindles is consuming Egyptian cotton. Bearing in mind the changes which have been produced by the war and the fact that the American section will probably suffer a permanent reduction in size whilst the Egyptian section has remained comparatively unaffected, it cannot be far from the truth to say that the former is twice as important to Lancashire trade as the latter.

(iii.) Specialization in Weaving.

The varieties of cloth are so much more numerous than those found in yarn that we would not expect to find geographical specialization in weaving to the degree to which it is found in the processes which precede it. Nevertheless, in the northern weaving belt, certain towns are associated with special classes and qualities of cloth. The coarse and staple products exported in large quantities to the East are found around Blackburn, Burnley and Darwen ; the finer goods being woven in the Nelson and Colne district. Preston makes flannelettes, long-cloths and many other fine goods ; Burnley weaves printing cloths of low and medium qualities in vast quantities ; Blackburn and Darwen are noted for the production of dhooties for export to India and China ; Accrington for mulls and jaconettes. Nelson and Colne, on the other hand, specialise in sateens, poplins, shirtings and other fine and fancy goods. Specialisation of this kind, however, has no particular permanence. A falling off in the demand for one cloth will force weavers to seek trade in other directions and a period of depression usually results in the encroachment of the more seriously affected towns upon goods produced in others. In particular, the growth of artificial silk weaving has tended to cut across the existing arrangement and produce less sharply marked divisions than formerly.

Recent Trends.

There has been very little change in the technique of production in the Lancashire cotton industry in the last fifty years ; the main principles of machine production upon which its growth was based during the nineteenth century have remained unaltered. Two changes are, however, worth notice : the growth of ring spinning, a movement of some standing, and the introduction of automatic looms on a large scale, a modern development. Lancashire is essentially the home of "mule" spinning, for 60 per cent. of the world's mule spindles are found in the county. The reason for this is to be found partly in the early growth of the

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industry in Great Britain and partly in the nature of the goods being produced. The cotton industry in the United Kingdom had attained gigantic proportions long before the system of ring spinning had been made a commercial proposition and the "mules" for a long time resisted the competition of "rings," because they are better adapted to the spinning of the fine yarns which had become a Lancashire monopoly. Ring spinning is now, however, becoming more important and suggesting that, even if it will not supersede the older method, it will at least rival it. The newer system has been improved to a degree which makes it possible to turn out the finest yarns; it demands less skilled labour than mule spinning; it is quicker and simpler. It is not possible to obtain reliable pre-war figures of the number of ring spindles, but statistics, published in the International Cotton Bulletin, show that even since 1923, during a period of depression, the numbers have been increasing.

TABLE 15.
Ring Spindles in Great Britain in thousands.

1923	12,539
1924	13,100
1925	13,465
1926	13,649
1927	13,509
1928	13,455

This movement, however, though it will undoubtedly continue, is not likely to be rapid. The advantages of ring spinning are not so great in the case of a highly localized industry, producing much fine yarn, as in the case of an industry geographically scattered and engaged in the coarser manufacture. Where replacement of the one method by the other does take place, it will, in most cases, await the wearing out of the present machinery. The tendency at the moment is for firms to "mix" their machinery, running mules and rings, together. Thus of 194 firms which Worrall records, in 1928, as possessing ring spindles, 149 also ran mule spindles and only 45 confined themselves solely to ring spinning. The tide is setting against "mule" spinning, but only the history of the next ten years can show how strongly.

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Of the other technical change, the use of automatic looms, little can be said since its use is not yet at all general. Here, too, the change is resisted both by the quality and variety of the cloths produced and the loss which would arise if many of the present plain looms were scrapped. And slow change here is desirable; for the widespread adoption of automatic looms would create many serious problems—arising out of the changed demand for labour and the need for new systems of wage payment—which can best be met piecemeal.

If, however, little modification is to be seen in the methods of production of the industry, significant changes are and will continue to take place in its scale and internal organisation. Some part of the fall-off in the output of the American section will probably be permanent and any such shrinkage in trade will demand a reduction both in capital equipment and in labour strength. These changes are going on, but only with a great deal of friction. As against a reduction of 30 per cent. in the output of yarn between 1913 and the post-war period the number of workpeople in the industry is declining much more slowly.

TABLE 16.

Estimated No. of Workpeople Insured under Unemployment Insurance Acts in Cotton Manufacture in G.B.

	Males	Females	Total
1923	206,040	361,400	567,440
1924	205,270	367,000	572,270
1925	207,650	365,500	573,150
1926	208,680	366,300	574,980
1927	207,600	362,350	569,950
1928	197,930	355,870	553,800

Much machinery has been broken up for export or is permanently closed down. The Federation of Master Cotton Spinners recently reported that 11 per cent. of the spindles represented by its members had entirely gone out of operation. And the surplus productive

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capacity of the American spinning section, leading to cut-throat competition, is driving the industry to seek in combination and amalgamation scientific adaptation to changed commercial and industrial circumstances. Combination will not take place easily because of the multiplicity of producers and the differences in their financial status. The Lancashire Cotton Corporation is the most advanced of several schemes for amalgamation, which seek to control competition and gain the economies of large-scale production, and which may ultimately widen their control to include weaving as well as spinning concerns.

SECTION III.—COALMINING

The Lancashire coalfield, the extent of which has already been dealt with in a previous section, has been worked much longer than most fields in the country, a fact which explains many of its characteristics. When compared with such fields as South Yorkshire, Kent or Nottingham the output per head in Lancashire is low; most of the richest known seams have been worked out; more than 50 per cent. of the present output comes from seams less than 4 ft. thick, the corresponding figure for South Yorkshire being only 20 per cent.; the bulk of the Lancashire output comes from comparatively small mines. The relative exhaustion of the field probably explains also why so many of the colliery companies carry on subsidiary businesses such as brick, tile and clay works; bunkering, stevedoring and exporting; bye-product or chemical works and coke ovens.

Size and Output.

The 1921 Census recorded 109,000 persons engaged in this industry in Lancashire, which was about one-tenth of the total number employed in coalmining in the United Kingdom. Since 1921 the number has undoubtedly decreased; the Secretary for Mines in his annual report for 1927 gave the numbers for Lancashire and Cheshire as 91,000. Measured by numbers employed, therefore, coalmining is only about one-sixth the size of the cotton manufacturing industry in the county, though it mainly gives employment to men. The weight and value of coal produced in the last four years for which figures are available are given in Table 17.

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TABLE 17.
Production of Coal in Lancashire and Cheshire.

	Tons millions	£ millions
1924	19·8	19·7
1925	17·4	16·6
1926	9·2	9·9
1927	17·1	14·9
1928	15·4*	

*Provisional figure.

In 1924, therefore, the value of the total output was only about one-twentieth of the value of the total cotton manufactures produced and the proportion has probably fallen below that point since 1924.

Distribution

The Census for 1921 gives the following distribution of workers in the larger centres.

TABLE 18.
Distribution of Persons engaged in Coal and Shale Mines in Lancashire, 1921.

	Males	Females	Total
Total Lancashire	106,862	2,331	109,193
Bolton C.B.	3,808	6	3,814
Burnley C.B.	3,051	10	3,061
St. Helens C.B.	10,549	199	10,748
Wigan C.B.	12,614	245	12,859
Ashton-in-Makerfield U.D.	5,119	277	5,396
Farnworth U.D.	2,559	8	2,567
Hindley U.D.	5,061	162	5,223
Ince-in-Makerfield U.D.	3,612	134	3,746
Swinton & Pendlebury U.D.	3,706	13	3,719
Leigh M.B.	6,506	163	6,669

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Wigan, St. Helens and Leigh are the areas of greatest output. Manchester itself, being on the edge of the coalfield, contains few collieries. The Bradford Colliery Company Ltd. has two mines—Bradford Deep and Bradford Parker—which are actually within the city. These two collieries produce about a quarter-of-a-million tons of household and manufacturing coal each year and employ 1,200 men. Further afield, the Moston colliery at Newton Heath normally employs about 850 workers, above and below ground. Knowles and Sons Ltd. have several pits at Pendleton and Pendlebury employing, in the aggregate, some 2,000 workers. The Bridgewater Collieries Ltd. and the Clifton and Kearsley Colliery Co. have mines at Clifton and Kearsley.

Recent Trends :

The conditions which have brought general depression to the coal-mining industry in the United Kingdom have struck the Lancashire industry with extreme severity. In the fierce competition which has been the outcome of overproduction the small and old mines have been at a particular disadvantage, and, since export markets have been more heavily hit than home markets, the former large export trade of the Lancashire collieries has been forced to seek new outlets. For some time after 1918 special circumstances such as the Ruhr occupation, enabled the county to maintain its output ; but since 1923 the trend has been steadily downwards. The number of men employed has decreased by 20 per cent. since 1920 and more than 10 per cent. since 1924. Table 19 gives the details.

TABLE 19.

Number of Persons Employed and Output of Coal Mines in Lancashire and Cheshire.

	No.'s Employed (ooo's)	Output in millions of Tons
1920	117	19·0
1921	107	13·1
1922	106	17·8
1923	106	20·2
1924	106	19·8
1925	99	17·4
1927	91	17·1

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As with the cotton industry the size of the industry is declining. In 1927, 27 mines in the county were abandoned. Very little re-organisation has gone on to overcome these difficulties. No scheme for price fixing or the rationing of output—such as those found in the Scottish fields, the Midlands and South Wales—has been attempted and indeed the Midland group has been able to make serious inroads into the Lancashire market. Recently, however, several schemes of amalgamation have been carried through. A small scheme near Wigan, for the merging of the Garswood Hall Collieries Ltd., and the Garswood Coal and Iron Co. Ltd. will find employment for about 4,000 hands. A larger scheme includes eight pits around St. Helens, covers collieries normally employing 20,000 men and is, therefore, large enough to confirm or refute the case put forward by the Coal Commission (1925) which claimed that mergers of this type would make important economies in production and merchandising; while Manchester Collieries Ltd. incorporated in the present year the firms of Andrew Knowles, Bridgewater Collieries, Fletcher and Burrows, and Clifton and Kearsley Coal, with an aggregate output of 4,000,000 tons per annum.

SECTION IV.—THE METAL AND ENGINEERING INDUSTRIES

IN an earlier section the importance of Lancashire's metal and engineering industries has been shewn, both in relation to the other industries in the county, and to engineering in the whole of the country. The manufacture of crude iron and steel in the area is not very important. South of Carnforth several firms, such as the Partington Iron and Steel Co., the Darwen and Mostyn Iron Co. and the Wigan Coal and Iron Co. are engaged in producing the raw material for the varied group of constructional engineering to be found in the district but, for the most part, this material is drawn from the Midlands or Yorkshire. On the other hand the range of goods produced by the various branches of the engineering industry is so great as almost to defy classification. The presence of coal and cotton in the county has left its mark; for the manufacture of textile and mining machinery and engines has long been the most important branch of the industry, but it would be a mistake to assume that engineering is merely ancillary to other industries in the area. The textile machine industry is largely an export trade, and many other important branches of engineering, such as locomotive manufacture, the making of machine tools, boilers,

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motor cars, cranes, hydraulic plants, and other prime movers, are engaged in meeting the demands of industries outside the county and country. The special case of electrical engineering is considered in a later section.

The engineering industry finds its chief, and increasingly important centre in Manchester. Specialised branches of the trade may have become localised elsewhere as, *e.g.*, the manufacture of wire and wire netting at Warrington, and a large part of the textile machinery industry around Bolton and Oldham; but the strong nucleus remains in and immediately around the city itself. This concentration, and the tendency of the industry to confine itself to finishing and construction rather than to the primary metallurgical processes, is clearly revealed by the following summary table, abstracted from the 1921 Census, and showing the most important centres for each branch of work.

Numbers Engaged in Lancashire Metal Industries, 1921.

		Total Male and Female
Puddling, Furnaces, Rolling Mills and Steel works.		14,437
Bolton .. C.B.	1,185	
Warrington .. C.B.	3,015	
Iron and Steel Foundries		4,027
Manchester, City of C.B.	1,010	
Manufacture of Wire, Wire Netting, Wire Rope		8,966
Manchester, City of C.B.	2,603	
Warrington .. C.B.	4,921	
Manufacture of Textile Machinery and Accessories		48,185
Oldham .. C.B.	13,493	
Manchester, City of C.B.	6,445	
Bolton .. C.B.	4,715	
Other Engineering (not Marine nor Electrical)		71,299
Manchester, City of C.B.	26,875	
Bolton .. C.B.	3,323	
Salford, .. C.B.	4,843	
Building and Repairing of Rolling Stock for Railways and Tramways		10,497
Manchester, City of C.B.	3,325	
Preston .. C.B.	2,981	
Manufacture of Self-propelled Vehicles		19,520
Manchester, City of C.B.	5,719	
Stretford .. U.D.	2,910	
Constructional Engineering, Bridge and Girder Works		4,400

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The diversity which makes classification difficult also renders any estimate of the general growth or decline in the size of the industry hazardous in the absence of recent Census of Population figures. Engineering in Lancashire grew rapidly during the war and for some years following the establishment of peace it seems to have remained busy and, perhaps, growing in meeting the demands of those industries in which mechanical equipment had become obsolete or inadequate to satisfy the markets of the post-war world. But the general national depression in engineering has not been entirely escaped by Lancashire. Much of the post-war growth was of a kind which could not prove permanent under peace time conditions, and the general engineering industry seems now to have found a stable level, when measured by labour available, rather below that existing at the end of the war. At any rate the number of insured persons in this occupation in the Manchester district alone has fallen since 1923, though part of this reduction may be accounted for by the introduction of labour-saving devices and more modern machinery.

Estimated Numbers of Insured Persons, ages 16-64, classified as belonging to the General Engineering Industry in the Manchester¹ district.

	Males and Females
July, 1923	42,540
July, 1924	38,620
July, 1925	38,890
July, 1926	39,390
July, 1927	36,400
July, 1928	36,960

Textile Machinery

An exception to this decline must be made in the case of the textile machinery industry. Before the war, it produced the bulk of the equipment erected in this and other countries, and the rapid growth in the number of spindles and looms in the world since 1918 has resulted in the development of an export trade, which has offset the fall in the home trade which has followed from the long post-war depression in the Lancashire cotton industry. The growth of the

¹The district included the areas served by the Ministry of Labour Employment Exchanges at Altrincham, Eccles, Levenshulme, Manchester, Newton Heath, Openshaw, Pendlebury, Salford and Trafford Park.

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use of the automatic loom, the increased demand for machinery for the production of artificial silk, the expansion and modernising of the Russian cotton industry and the tendency on the part of textile machine businesses to enlarge the range of the equipment they produce : all these have resulted in a prosperity perhaps only exceeded by that in the motor-car branch of this industry.

The growth of the Lancashire cotton industry has been dependent in more than one sense upon the establishment of a strong textile engineering industry, for the latter has not only guaranteed that the latest and most perfect technical equipment was available for spinners and weavers, but, in many cases, the textile machinists by granting long credits or even by direct financing of new mills, have constituted one of the channels by which capital has found its way into permanent investment. Earlier tables have already revealed that, in 1921, there were 48,185 operatives in the county engaged in the manufacture of textile machinery and accessories, which was two-thirds of the total of such operatives in the country, and that the vast bulk of these workers were in Oldham, Manchester and Bolton. From the Census of Production for 1924 the total output of textile machinery in the United Kingdom is given as £18,000,000. The value of textile machinery produced in Lancashire in the period was probably, therefore, in the neighbourhood of £12,000,000, though it is impossible to make any exact estimate, since many textile machinery firms produce other engineering requisites, particularly engines and machine tools.

There are probably over eighty firms predominantly interested in this branch of engineering in the county, but a few very large firms stand out above the others. The largest is that of Platt Bros & Co. of Oldham, which has part of its resources invested in collieries and general engineering enterprise, but which probably has more capital and labour devoted to textile engineering than any other individual firm in the world. Dobson and Barlow Ltd. of Bolton, another firm in which the family influence has been almost continuous since inception, has a history quite as long as that of factory production of cotton goods in Lancashire. Howard and Bullough's of Accrington, is a further case of a small firm attaining great size largely through the constant association of ownership and direction. J. Hetherington and Sons Ltd. is the only very large textile machinery works in Manchester. Asa Lees and Co. of Oldham, and Mather and Platt's of Newton Heath, are also in the group of dominating firms. All these businesses produce

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a very great range of machinery used in the preparing, spinning, doubling, combing, weaving and other subsidiary and finishing processes in the cotton, wool, worsted and silk industries whilst some of them, particularly Platt's and Dobson and Barlow's, have become particularly interested in the construction of artificial silk plant. The following list gives the names of some of the firms in the district, most of which are members of the Textile machinery Makers Association, together with the number of hands normally employed and the capital wherever this information was available.

Firm	Approx. No. of hands employed	Paid-up Share Capital	Outstanding Debentures
Platt Bros. & Co. Ltd. ..	7,000	£3,710,160	£1,030,000
Dobson & Barlow, Ltd. ..	5,500	£400,000	£230,722
Howard & Bullough Ltd. ..	5,000	£1,500,000	£250,000
Mather & Platt Ltd.	(details under General Engineering)		
Asa Lees & Co. Ltd.	2,300	£360,000	—
J. Hetherington & Sons Ltd.	2,000	£790,371	—
Tweedale & Smalley (1920) Ltd.	2,000	—	—
Whittaker's Automatic Looms Ltd.	—	—	—
British Northrop Loom Co. Ltd.	—	—	—
J. Pilling & Sons Ltd.	—	—	—
H. Livesey Ltd.	—	—	—
Hacking & Co. Ltd.	—	—	—
Groggins Ltd.	—	—	—
Baerlein & Sons Ltd.	—	—	—
Willan & Mills Ltd.	—	—	—
Brooks & Doxey (1920) Ltd. . .	900	£551,031	—
J. Stubbs Ltd.	500	—	—
Arundel, Coulthard & Co. Ltd.	400	£350,000	—
Wm. Whiteley & Sons Ltd. . . .	300	—	—
Taylor, Lang & Co. Ltd.	300	—	—
W. Tatham Ltd.	200	—	—
R. Threlfall	200	—	—
P. & C. Garnett Ltd.	200	—	—
Elijah Ashworth	100	—	—
Chadwick Machine Co. Ltd.	100	—	—
W. Ayrton Ltd.	100	—	—

Heavy Machinery

Among engineering firms specialisation upon a very narrow group of goods is not usual, and the growth of a business most often takes the form, not of an enlargement of production in the existing range, but of a widening of the classes of articles manufactured. This is a marked characteristic of Lancashire engineering for the largest and most clearly defined group—textile engineering—is invariably associated with other forms of constructional work and the recent

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growth of electrical engineering, outlined below, is in many cases merely a new graft on an old stock. The manufacture of stationary steam engines for cotton mills, colliery winding, hauling and ventilation, and milling, interest, to some degree, between 70 and 100 firms in Lancashire and of these the majority are probably to be found within or on the outskirts of Manchester. Of these Mather and Platt, Sir W. G. Armstrong, Whitworth and Co., Galloways, Beyer, Peacock and Co., the National Gas Engine Co., Crossley Bros., Lancaster and Tonge, the Vulcan Foundry Co., and Metropolitan Vickers Electrical Co., are among the largest. In Bolton, John Musgrave and Sons, Hick, Hargreaves and Co, and John and Edward Wood are also engaged in general engine building. Beyer, Peacock and Co., Nasmyth Wilson and Co., and the Vulcan Foundry Co. specialise in the construction of locomotives, not so much, however, for the home market, since the biggest railway companies have their own plants for locomotive manufacture, as for export. The modernisation of colliery equipment and the establishment of bye-product plants at the pit head has opened up a market that is not merely local for mechanical stokers of which many firms in Bolton and Manchester have taken advantage. The machine tool industry has also felt the stimulus of recent changes in the technique and organisation of industry which are replacing manual labour by mechanical device. Manchester and district supplies much of the machinery used by the Sheffield heavy steel industry. Many of the machine-tool firms are small and they continue to exist, because a high degree of specialisation or their concentration upon the manufacture of parts enables them to stand in line with the largest firms ; but many great firms are associated with machine tool production, among which may be mentioned Hulse and Co., Craven Bros. and Sir. W G. Armstrong, Whitworth and Co. Of the smaller firms the following is a typical group : Charles Churchill and Co., Broadheath ; Haigh (Oldham) Ltd. ; James Spencer and Co., Hollinwood ; Associated British Machine Tools Ltd., Manchester ; V. P. and G. Hastings, Manchester ; Meldrums Ltd., Timperley ; Craven Bros, Reddish ; Joseph Stubbs Ltd, Ancoats ; William Muir and Co ; Brayshaw Furnaces and Tools Ltd , Hulme ; Babcock and Wilcox Ltd ; Smith and Coventry ; Kendall and Gent ; Culpán, Spencer and Co.

This enumeration of the different varieties of engineering specialities produced might be almost indefinitely continued if space were available, but mention can now only be made of firms with such

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reputations as Galloways for boilers ; the Linotype Co. Ltd., Altrincham, for printing machinery of many classes ; B. & S. Massey, who produce mechanical hammers ; Richard Johnson and Nephew for wire and cable manufacture, the British Insulated and Helsby Cable Co. for all types of electric cables, and Hans Renold for chains.

Beyond this there are many motor-car firms in the district to which only the shortest reference can be made. The Crossley and the Belsize cars are both natives of Manchester, and the war gave a great impetus to the growth of both these companies. The Ford works was established just before the war and subsequent developments led to both body building and assembling being carried through at the Trafford Park factories. The Willys-Overland Crossley Co. Ltd. was established at Heaton Chapel in 1919, for the assembly of the American Overland Car in this country.

The following table, though far from complete, summarises details concerning some of the more important engineering firms in the district, though it must be recalled that the activities of some of these firms are not confined to the plants located in Lancashire and that many of them are owned or controlled by larger financial groups.

Company	Paid up Capital	Debentures or Debenture Stock Outstanding	Numbers Employed (Approx.)
Metropolitan Vickers Electrical Co. Ltd. (acquired in Dec., 1928, by Associated Electrical Industries Ltd. which has capital as follows) ..	£4,731,950	£1,036,353	
Mather and Platt	£1,763,660	—	4,000
Galloways Ltd.	£132,952	£126,715	—
Nasmyth, Wilson & Co. Ltd. ..	£194,300	—	—
Heenan & Froude (owned by S.T.D. Motors Ltd. of which the capital is as follows) ..	£3,224,408	£375,000	—
Pearson & Knowles Coal & Iron Co. Ltd.	£378,758	£1,220,000	6,000
National Gas Engine Co. Ltd. ..	£840,007	—	1,850
Thomas Robinson & Sons Ltd. ..	£371,588	—	—
Crossley Bros. Ltd.	£911,097	—	—
Linotype and Machinery Co. Ltd.	£1,950,007	£837,368	—
Vulcan Foundry Co. Ltd.	£945,097	—	—
Babcock and Wilcox Ltd.	£4,578,712	—	—
British Insulated and Helsby Cable Co. Ltd.	—	—	—
Taylor Bros. & Co. Ltd.	(Controlled	by Vickers)	1,000

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Electrical Engineering

An unusual combination of forces has produced a very rapid growth in the electrical manufacturing industry of the United Kingdom in the last fifteen years. British industry in the nineteenth and early twentieth century depended almost entirely upon steam for its motive force, and the extent to which this country lagged behind others in electrical development made the change-over the more urgent and drastic. The increased demand for the new power in industry had, both as result and cause, the increased use of electricity for domestic lighting, heating and cooking, since the problems associated with the "peak-load" in electricity supply demanded the creation of new and complementary sources of demand and this increased domestic consumption, in turn, gave industry the lower charges made possible by enlarged output. The recent work of the Electricity Commissioners in co-ordinating and centralising the supply of power; the necessary erection of super-power stations; the gradual replacement of steam by electricity in railway transport; the social demand for cleaner industrial cities; the introduction of electrical amusements such as wireless: all these have led to an ever increasing demand for electrical machinery for generation, storage and distribution which, as yet, the competition of the petrol motor has done little to reduce. It was not to be expected that a movement of this revolutionary sort would leave the Lancashire engineering industry untouched. Even in 1921 a large number of operatives were engaged in this branch of work, the table following showing the important divisions, with their location, of this manufacturing group.

Lancashire Electrical Manufacturing Industry, 1921.

Manufacture of Generators, Motors, Transformers, Switchgear		13,703
Stretford U.D.	10,360	—
Manchester, City of C.B.	1,393	—
Manufacture of Electrical Cables, Wire and Flex	—	8,317
Electrical Mining and Contracting	—	4,345
Other Electrical Manufactures	—	8,914
Salford C.B.	1,914	—
Manchester, City of C.B.	880	—

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It is apparent that, as with general engineering, the great bulk of this industry is to be found in the immediate neighbourhood of Manchester, and the growth in this locality has been very great since 1923.

Estimated Numbers of Insured Persons, aged 16-64, in Electrical Engineering in the Manchester District.¹

	Males and Females
July, 1923	11,980
July, 1924	13,170
July, 1925	15,200
July, 1926	14,230
July, 1927	15,180
July, 1928	16,270

As with general engineering the variety of products turned out by the industry is vast, including land and marine turbines, alternative and direct current motors, rotary converters, turbo-alternators, condensers, railway and tramway motors and equipment, switchgear, conformers, gears for marine work and electric light installation. And here, too, are to be found a few large firms dominating the industry and often engaged in general as well as electrical engineering, but surrounded by a large, some say uneconomically large, group of smaller firms specialising in the output of parts, or holding their own by combining wholesale or retail sale with production. The largest firm, of course, is Metropolitan Vickers Electrical Co. Ltd. which, growing out of the British Westinghouse Electric and Manufacturing Co., was acquired in 1919 by the Vickers' interests and was taken over in 1928 by the Associated Electrical Industries Limited. The works at Trafford Park engage in all types of electrical work from the most gigantic constructional undertakings, such as large-scale power plants or electric locomotives, to electrical fittings. The English Electric Co., another large combine with works in many parts of the country, incorporated the firm of Dick Kerrs & Co. of Preston, where electric locomotives and tram-cars are manufactured on a large scale. Mather and Platt's at Newton Heath no longer confine themselves to the

¹Which included the areas served by the Ministry of Labour Employment Exchanges at Altrincham, Eccles, Levenshulme, Manchester, Newton Heath, Openshaw, Pendlebury, Salford and Trafford Park.

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manufacture of textile machinery, but are engaged in the equipment of electric railways. The following list of electrical firms in Manchester and District which are members of the British Electrical and Allied Manufacturers' Association, with the figures of the capital of some of the largest, will give an idea of the importance of this growing branch of industry.

Company	Capital paid-up	Debentures Outstanding
Daniel Adamson & Co. Ltd.	—	—
Ashworth & Parker	—	—
H. T. Boothroyd Ltd.	—	—
British Insulated Cables Ltd.	£1,833,333	£700,000
British Vulcanised Fibre Ltd.	—	—
Brookhirst Switchgear Ltd.	£126,000	£25,000
Buckley and Taylor Ltd.	—	—
Burnley Ironworks Co. Ltd.	—	—
Chloride Electrical Storage Co. Ltd. ..	£391,625	—
H. Clarke & Co. Ltd.	—	—
Clayton, Goodfellow & Co. Ltd. ..	—	—
Crossley Bros. Ltd.	(details under General Engineering)	—
Electromotors Ltd.	£85,000	—
Erskine, Heap & Co. Ltd.	£45,489	—
Ferguson, Pailin Ltd.	£150,000 (largely held by Associated Electrical Industries Ltd.)	—
Ferranti Ltd.	£206,166	—
Galloways Ltd.	(details under General Engineering)	—
W. T. Glover & Co. Ltd.	—	—
Hick, Hargreaves & Co. Ltd.	£240,000	£50,000
Lancashire Dynamo Motor Co. Ltd. ..	£314,220	£50,900
Mather & Platt Ltd.	(details under General Engineering)	—
Metropolitan Vickers Electrical Co. Ltd.	(details under General Engineering)	—
Oldham & Sons Ltd.	£24,063	—
Parmiter, Hope & Sugden Ltd. ..	£14,082	—
Frank Pearn & Co. Ltd.	—	—
Record Electrical Co. Ltd.	£28,950	£4,550
George Saxon Ltd.	—	—
Stott & Hodgson Ltd.	—	—
S.S. Scott & Co.	—	—
Switchgear & Cowans Ltd.	£29,395	£18,000
Bertram Thomas	—	—
Vlastow, Clark & Watson	—	—
Wardle Engineering Co. Ltd.	£13,071	£4,000

SECTION V.—THE CLOTHING INDUSTRY

IN a previous section reference has already been made to the often unsuspected importance of the clothing industry of Lancashire. Generalisations concerning the development of this industry in the last ten years are difficult to make and perhaps not very safe when made. The industry shows a great diversity in organisation, many firms are very small in size and remain in obscurity, and a good deal of home work still exists. Nothing short of a complete Industrial Census could determine, beyond the possibility of doubt, how the industry is developing and to what extent it is growing. But if statistics are scanty it is possible to dogmatise in one or two directions, upon the basis of the knowledge of those who are in closest touch with the industry and are most likely to detect its predominant currents. The Lancashire clothing industry is, in the first place, a Manchester industry. Some clothing workers are to be found in Liverpool, Blackburn, Wigan and Preston, but the great bulk of the workers are to be found in the boundaries of Manchester itself or the boroughs immediately adjacent to it. The manufacture of wearing attire has become a staple occupation of the commercial centre. Further, it is possible to say that the industry is growing. Some parts of it, such as the manufacture of shirts and collars, were forced into rapid growth during the war and have since declined. Others, such as the manufacture of underclothing, have been affected by changes in fashion or the protective policies of export markets. But there can be little doubt that tailoring, the most important among the group of clothing occupations, is growing in the Cheetham and Strangeways parts of the city. It will come as a surprise to most that there are more clothing workers in Manchester than in Leeds itself, though Leeds is more dependent upon its clothing industry than is Manchester, which contains a multitude of different and important trades. The clothing industry in the two cities, however, differs both in the quality of the article produced and the method of production. In Leeds the staple product is men's clothing made from heavy woollen fabrics, in Manchester there is much more making up of lighter fabrics, though the production of men's ready-made clothing is increasing. In Leeds, although there is a good deal of manufacture on a small scale, a high proportion of the total output is made by a few giant firms, often employing up to 4,000 workers, of long establishment. The factories for the manufacture of ready-made

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clothing in Manchester are probably fewer, and are certainly smaller and of more recent establishment. In brief the industry in Manchester is younger, more varied in product, and more in the nature of a side line to the staple industry of the district than is its rival.

Size and Output

The 1921 Census gives the following figures for different branches of clothing manufacture.

The Clothing Industry in Lancashire and parts of Cheshire and Derbyshire—1921.

	Males	Females	Total
Tailoring	18,210	29,677	47,887
Dress and Blouse making	406	15,834	16,240
Manuf. Shirts, Collars, Overalls. ..	857	5,248	6,105
„ Stays and Corsets	141	1,109	1,250
„ Underclothing	354	4,243	4,597
„ Handkerchiefs, Scarves and Ties	87	440	527
„ Millinery	277	6,713	6,990
„ Cloth Hats and Caps	452	1,754	2,206
„ Felt Hats	4,934	3,640	8,574
„ Boots, Shoes, Slippers	10,760	3,213	13,973
„ Clogs	1,794	63	1,857
„ other articles of clothing	605	2,057	2,662
Total	38,871	73,991	112,862

It will be noticed that Tailoring, Dress and Blouse-making and Boot, Shoe and Slipper manufacture are the important branches of this industry, and that women workers very much outnumber men save in hat manufacture and the shoe industry. Taking all the different sections the industry is as important in numbers as the coal-mining industry. A reference to previous sections will show that Lancashire contains about one-seventh of the clothing workers in the United Kingdom. No estimate of the output of the industry, even by value, is possible; but it is of interest that an investigation carried through for the U.S.A. Bureau of Commerce in 1923 showed that the weekly output of 25 important shoe and slipper manufacturers in the Rossendale valley was about 450,000 pairs per week.

Distribution

In Manchester itself the tailoring industry, in which branch is included wholesale and retail tailoring and mantle-making, consists of three parts. Some factories exist, though they rarely employ more than 300 operatives. As in the clothing industry in other parts of the country, there are also many sub-contractors, mostly Jewish, who work in small tenement workshops, and some of whom manufacture rain-coats on an increasing scale. This class is slowly declining according to one authority.¹ And finally there is a group of handicraft tailors working largely for the retail trade. The making of blouses and dresses is partly carried on by specialised firms, but the bulk of it is carried through by firms who also manufacture the cloth, such as Tootal Broadhurst, Lee & Co., or by firms engaged in the general wholesale trade such as Rylands Ltd. Underclothing, shirts and collars formerly provided much home work, but they are now largely produced in small factories in all parts of the city.

Immediately outside Manchester, Stockport and Denton the manufacture of felt hats is specialised in. This is a highly localised and long established industry, which has a very high monopoly of this class of article, more than 80 per cent. of the workers in U.K. being found in this district.

Further afield lies the shoe and carpet slipper industry of the Rossendale valley. Centred in Waterfoot it produces vast quantities of felt, velvet and cloth slippers of the cheaper kind. Cheap canvas and leather shoes are also made, on a smaller scale, but the proportion of leather used is never very high. Several of the factories are large, much larger than those in other parts of the country devoted to the production of leather boots and shoes, the weekly output of the very biggest firms often exceeding 60,000 pairs.

SECTION VI.—MISCELLANEOUS INDUSTRIES

ONLY a brief reference is possible to many other branches of manufacture which, whilst they are dwarfed by the size of the larger industries in Lancashire, would stand out clearly as important sources of employment in a less concentrated industrial area.

¹ S. P. Dobbs. "The Clothing Workers of Great Britain," page 49. Some of the details for this section are taken from this work.

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Several of the diverse branches of the Chemical industry are located here. The textile dyeing, printing, bleaching and finishing industry merits much more attention than space will allow for it constitutes one of the primary advantages of localisation by which the cotton industry is favoured. The total number of workers employed in this industry in Lancashire is some 50,000, about half the total of those similarly employed in England and Wales. If this proportion holds for output as well as numbers employed then in 1924 the finishing industry was responsible for about 900,000,000 yards of bleached cloth; 470,000,000 yards of dyed cloth and 390,000,000 yards of printed cloth. The city of Manchester itself is the most important urban centre, but finishing works belonging to one or other of the three large combines which now dominate the industry are to be found widely scattered in urban and rural areas where water supplies are plentiful and of the requisite quality. Other branches of chemical manufacture are to be found in St. Helens in the production of glass; in Warrington where the bulk of those, in the county, engaged in making soap, candles and glycerine are located, and in Manchester itself where chemical materials are produced on a large scale. The manufacture of rubber and rubber goods was given in 1921 as employing some 15,000 persons, one third of those in England and Wales, and here again the bulk of the output is turned out within five miles of the city itself.

Manchester is the second oil-importing port in the country, and has an important trade in oils and lubricants. Trafford Park is the site of a new seed-crushing industry. In the same area glass-bottle making is carried on; while elsewhere within the greater Manchester area, there are pottery works. Paper is an important interest, a large manufacture being carried on in the soft-water districts to the East of the city, paper-staining in the surrounding district, and a large printing and stationery manufacture in the city itself. The importation, conversion, distribution and consumption of timber forms a considerable element in the district's activities, which the Ship Canal has enhanced. The large population makes the area an important one in every branch of industry concerned with the manufacture and preparation of food and drink. The same influence accounts for a large building and building material industry.

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Finally, passing notice must be given to some occupations which are dealt with in more detail either in other parts of this section or other chapters of the volume. Gas, water and electricity employed, in 1921, more than 20,000 workers; railway transport nearly 70,000 persons; the various forms of road transport about 40,000 workers. The professions employ large numbers in the larger towns more than 7,000 people being employed in Banking and 17,000 in Insurance in the whole of the country. And it has already been pointed out that those engaged in the retail and wholesale distributive trade are numerous enough to make the employment found in buying and selling a close second to that found in manufacturing.





CHAPTER V.

THE TEXTILE EXPORT TRADE

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SECTION I.—THE ORGANISATION OF THE TRADE

TO some millions of the world's inhabitants, most of whom can neither read nor write, Manchester means cotton. They may have but the haziest notions of geography, and yet be aware that from a remote corner of England, called Lancashire, and generally thought to be in or near Manchester, comes a large part of the cotton goods offered for sale in their local store or bazaar. Fifteen years ago it would have been safe to say that practically three-quarters of all the imported cotton goods in the combined markets of the world were shipped by Manchester firms. Even to-day, after a world war, and a series of disasters, natural, political and economic, unparalleled at least within living memory, it may still be affirmed that a half, in quantity, and more in value, of the world's international trade in cotton goods originates in Manchester.

It must be remembered that the cotton goods which are exported from one country to another form but a small fraction of the total production of the world's spindles and looms. About 25 million bales of raw cotton are consumed annually throughout the world, to produce some 5 million tons of cotton cloth. The export returns of the various producing countries do not account for more than 750,000 tons, of which this country exports 350,000 tons, or nearly 47 per cent. If these quantities were calculated in square yardage instead of by weight, the British proportion would probably be much higher, since British exports consist of fine and, therefore, light cloths, to a larger extent than those of other countries. For the same reason, as we have already mentioned, British exports appear in a better light on the basis of values, since they are generally more highly priced, according to their quality.

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From the end of the eighteenth century to the beginning of the European war, the British cotton export trade grew, at first rapidly, but later more slowly, as the industrial systems of other countries developed, and enabled them to supply an increasing share of their own needs. The peak was reached in 1913, when 7,075 million yards of cotton piece goods were exported ; but the period of most rapid expansion was by that time already over. India, the world's largest consumer of cotton goods, had begun to supply her own needs, while other countries, such as Japan, were producing an exportable surplus. It was, nevertheless, true that Manchester was shipping each year an increasing quantity of cotton goods abroad, practically up to the outbreak of the war.

The relative importance of this trade can perhaps best be seen by comparing it with the total value of British exports. Before the war, exports of cotton manufactures (excluding wearing apparel) amounted to nearly a third of the total value of exports of all British manufactured goods, and though the proportion has dropped since the war, it was still 25 per cent. in 1928.

Some of this trade is conducted by manufacturers, selling their own goods direct to the overseas customer. By far the largest part, however, passes from the manufacturer into the hands of the merchant. It is the merchant's business to find trade and to supervise the process of distribution. He is the link between maker and consumer. Few other industries afford a similar example of specialisation in selling, and in none, probably, does the merchant hold such a distinctive position. There are signs that even in the cotton industry the tendency which is manifest in other industries, for the manufacturer to establish direct contact with his customers, will become more general. But at present, and in the immediate future, the merchant is not likely to be displaced, since there are few manufacturers who could undertake his functions in addition to their own.

It was perhaps inevitable, considering the way in which the cotton industry was established in this country, and the character of its product, that a special merchanting class should emerge. The founders of the English cotton industry were, for the most part, ill-equipped for the purpose of trading, their capital being generally no more than sufficed for the conduct of their manufacturing processes. There were,

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of course, from the earliest times, Manchester merchants whose main business was the sale of cotton goods, but their numbers were largely increased by the extraordinary growth of the industry after the technical inventions of the later eighteenth century opened up dazzling prospects of profit to all who were engaged in it. Whereas the export trade had formerly been done through Liverpool, London and Bristol houses, by the end of the century it had taken root in Manchester. As the industry developed it attracted men of enterprise from other parts of the country, and, indeed, from most European countries. Among those who came to Manchester in this way was Nathan Meyer Rothschild, of the Frankfort banking firm, who made one fortune in the Manchester cotton trade before he withdrew to London, there to make an even greater one in banking. It is still characteristic of the cotton export trade that many of its recruits are drawn from among its foreign customers, though the stream has now slackened perceptibly. Many of the leading Manchester export houses owe their prosperity to the ability and application of a foreign founder.

Cotton cloth can be, and is produced in an almost infinite variety. At the same time, it lends itself to grading. Although no two manufacturers' cloths are exactly alike in quality and construction, it is possible to classify cloths without much difficulty. This circumstance, together with the concentration of the industry, accounts for the separation of selling from manufacturing. The presence within a comparatively small area of a large number of makers of approximately similar goods, and the fact that the markets for the goods were mainly abroad, offered an opportunity for the exercise of the merchant's functions. By providing the manufacturer with an immediate outlet for his goods, and by the wide selection which they were able to offer consumers, the merchants of Manchester notably aided the development of the industry. Since the merchants' efforts were constantly directed to the extension of their trade, they opened up many new markets for Lancashire goods. Few manufacturers had time or money to devote to finding customers overseas, when they could without trouble or risk dispose of their whole output in Manchester. Those manufacturers who undertook the sale of their own goods abroad were often those who produced special qualities, which required more technical propaganda in order to obtain sales. Such goods, which are generally sold under proprietary brands or trade marks, are, however, the exception in the Lancashire industry, whose output

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is almost entirely handled by merchants, to whom the trade marks under which it reaches the consumer, as well as the goodwill attaching to the latter, usually belong.

It is difficult to estimate the amount of capital employed in the Manchester textile export trade, since the great majority of the firms engaged therein are partnerships or private companies, whose accounts are not available for inspection. The value of the trade during the last few years has ranged between £140 millions and £200 millions per annum. Taking the lower figure, and assuming that it represents a turnover not less frequent than three times a year, we get £45-50 millions as the apparent investment in the trade. Allowing for the share of this which is provided by banks, or which is not financed in Manchester, there must still remain a very considerable part as the capital provided by merchants themselves. If a guess were to be hazarded, the amount might be put at not less than £25 millions, and probably not more than £30 millions.

This capital is unequally divided among about 1,000 firms, of whom probably about 600 do almost the whole of the business. The remainder, although classified as merchants, include a large proportion of small "one-man" businesses, many of which are little more than commission agencies, while others are in effect the Manchester branches of foreign importing houses, conducting a general trade. Even among the smaller number given above, there is great disparity of size and importance as between different firms. To some extent this is due to differences in function, since the services which merchants may offer vary considerably.

Some firms export cotton goods of all kinds to all markets, or to a large number of different markets. Among these may be included the hundred or so firms who deal in other textiles besides cotton. The next most important type of firm is that which specialises in a particular market or group of markets, to which it ships all kinds of cotton or other textiles. Another numerous class confines itself to a particular type of goods, such as grey cloth, shirtings or fancies, which it is prepared to sell in any market. Still another group carries specialisation a stage further, and deals only in some limited range of goods for a single market or region, as, for example, bleached goods for Rangoon, or prints for Shanghai. Some of these forms of organisation have obvious advantages, but others are gradually giving place to more economical types. This is especially true of the last-named type of

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firm, since the post-war depression has emphasised the risks entailed in carrying all one's eggs in a single small basket. The general tendency appears to be towards a wider distribution of risks and it has been assisted by the increasing keenness of competition in all markets, which has compelled many firms to offset losses incurred in one direction by launching into new lines or new markets.

It must not be thought that the merchant is merely a middleman. The accusation is often brought against him by those who fail to realise the number and variety of his responsibilities. Most of the export trade which passes through Manchester involves much more than the transfer of goods from the manufacturer to the foreign importing house that is buying them. Even in the sale of grey cloth, which reaches the consumer usually unchanged from the state in which it leaves the manufacturer, there is need for the merchant's services. Tastes vary widely in different markets, and the merchant's duty is to keep in close touch with those in which he is interested, noting changes in the popular fancy, and endeavouring to adjust his supplies accordingly. In addition to the cloth which is exported in the grey, or unbleached, state, there are the exports, amounting to two-thirds of the whole trade, of bleached, dyed, printed and coloured goods. The latter category comprises goods woven with dyed yarn. In the majority of transactions the merchant buys grey cloth from the manufacturer, and has it converted by the bleacher, dyer or printer according to his customer's requirements, or according to his own anticipation of what the demand will be.

The merchant finances the goods from the time they leave the manufacturer until they are finally disposed of in the overseas market, a period which may extend to six months or even longer. As the manufacturer is customarily paid within seven days of delivery, and subsequent processes and services must be paid for as they occur, it will be seen that substantial capital is needed. It is the merchant's function also to assess the credit risks of his various customers, and where goods are exported in anticipation of definite orders, he takes the additional risk of the market proving unfavourable.

The Royal Exchange

The success of the system as it has developed, over more than a century, rests largely upon the merchant's ability to obtain readily supplies of whatever goods his customer may require, at competitive

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prices. The Manchester Royal Exchange provides the means whereby this is made possible. Practically every firm in Lancashire and the adjoining counties that is either directly or indirectly interested in the cotton trade is represented in its membership, and most of them have their regular positions on the floor of the Exchange, where they may always be found by suppliers or customers. Here the merchant can obtain quotations daily, from a dozen or more manufacturers, for any cloth that is made. The existence of this open market establishes a ruling price, in the principal types of cloth, which affects even those numerous transactions which are conducted outside the Exchange.

It was natural that the presence of a large number of buyers of cotton goods for overseas markets should attract to Manchester a considerable amount of trade in other textiles. The West Riding of Yorkshire, with its wool manufactures, is not many miles distant. Many woollen factories, indeed, are to be found in Lancashire, and there are many in which cotton and wool are used in combination. The old established silk industry of Macclesfield, and the new artificial silk industry dispose of a large part of their production through Manchester. Moreover, the growth of textile industries in other countries has brought an increasing demand for cotton yarn and artificial silk yarn, since weaving generally offers fewer technical difficulties than spinning. The textile export trade of Manchester therefore includes much besides cotton cloth. It depends mainly, however, upon the vastly greater demand for the latter. The relative importance of the different branches is shown in the table of textile exports from this country (Table 1).

TABLE 1.

Exports of U.K. Manufactures—Values (f.o.b.) in £ millions.

	1913	1924	1928
Total—All U.K. Manufactures . . .	525·3	801·0	723·4
All Textiles (except Apparel and Made-up Goods)	159·1	296·7	234·1
Cotton Yarns	15·0	27·8	22·6
Cotton Manufactures	105·4	171·4	122·7
Woollen and Worsted Yarn and Manufactures	32·1	67·8	56·9
Silk and Manufactures	2·2	2·2	2·4
Artificial Silk and Manufactures . .	—	4·3	10·1
Linen Yarn and Manufactures . . .	9·5	14·7	10·4
Jute Yarn and Manufactures	3·8	4·1	4·9

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Although several firms deal in all kinds of textiles for export, and many specialise in wool or silk, the markets for textiles other than cotton show less variation from the home market, both in the type of goods demanded, and in the method of trading, than do the leading markets for cotton piece goods. Particularly in the higher qualities of woollen, silk, and similar goods, there is little distinction between the home and export trades, and the same firms carry on both. Much of the yarn trade, on the other hand, especially in fine counts, passes directly between spinner and overseas importer. These trades form part of the Manchester textile export trade, but are not so characteristic of it as cotton is.

SECTION II.—EXPORT MARKETS

The chief markets for cotton goods are, as might be expected, the tropical and semi-tropical countries. While the more advanced and relatively wealthier inhabitants of Europe and America, together with the white population of other parts of the world, consume individually larger quantities of cotton goods, the aggregate demand of the millions of Asia and Africa dominates the export trade. Since these continents are industrially the least developed they have remained dependent on imported supplies to a greater extent than Western communities, though Japan, India and China are now producers on a large scale. Tables 2 and 3 indicate the relative importance of the principal markets, both generally, and as customers for British cotton goods.

TABLE 2.

Imports of Cotton Piece Goods into the Principal Markets.
Values in £000's. (Converted at average exchange rate of the year).

		INDIA.			
		1913-14	1924-25	1928-29	
Total	.. .. .	38,758	50,013	..	40,371
From U.K.	.. .. .	36,540	43,430	..	30,330
„ Japan	.. .. .	115	4,140	..	6,666
		CHINA.			
		1913	1924	1927	
Total	15,059	28,044	..	18,352
From U.K.	8,794	9,984	..	2,863
„ Japan	2,831	14,387	..	12,860

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EGYPT,

	1913	1924	1928
Total	3,751	9,025	6,730
From U.K.	3,067	5,626	3,177
„ Japan	—	272	1,136
„ Italy	—	2,021	1,566

BRITISH EAST AFRICA.*

	1913-14	1924	1928
Total	571	1,252	1,228
From U.K.	166	468	327
„ Japan	not shown	339	275
„ India	76	209	152

*Not including Tanganyika, formerly German East Africa.

BRITISH WEST AFRICA.

	1913	1924	1928
Total	1,676	2,653	4,049
From U.K.	—	1,742	3,712
„ Germany	—	6	145

AUSTRALIA.

	1913	1924-25	1927-28
Total	4,574	10,124	7,717
From U.K.	3,925	8,766	6,884
„ Japan	50	692	351
„ U.S.A.	142	392	297

CANADA.

	1913	1924-25	1927-28
Total	2,297	3,918	2,968
From U.K.	1,736	2,476	1,369
„ U.S.A.	521	1,260	1,365

U.S.A.

	1913	1924	1928
Total	1,594	8,536	3,255
From U.K.	1,024	7,030	2,053
„ Switzerland	41	312	473

ARGENTINE.

	1913	1924	1926
Total	4,766	6,797	8,428
From U.K. .. ..	..	3,171	4,062
„ U.S.A. .. .. .	..	470	499
„ Italy .. .. .	..	1,926	2,293

BRAZIL.

	1913	1924	1926
Total	3,237	4,026	3,983
From U.K.	2,049	2,833	3,102
„ Italy	145	89	107

— = Not available.

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It will be seen that although the British share in the trade of the above countries is still very considerable, in most of them competition has greatly increased since the war. Other producing countries are extending their export trade at the expense of Lancashire. This tendency is clearly illustrated in the comparison of exports of cotton piece from the countries mainly interested in international trade (Table 3).

TABLE 3.

Exports of Cotton Piece Goods from Principal Manufacturing Countries.

From	1910-13 Av.	1925	1926	1927	1928
		million kilos			
France	40·5	42·8	48·0	63·2	57·4
Germany	39·9	18·0	17·7	18·4	17·7
Belgium.. .. .	27·2	17·8	21·7	23·8	27·1
Holland.. .. .	(a)	26·7	26·5	28·7	30·1
Italy	41·2	63·9	50·0	49·5	53·5
Czecho-Slovakia ..	(a)	39·7	33·8	42·1	36·8
U.K.*	548·1	382·1	325·8	351·3	330·9
		million linear yards			
U.K.*	6,651	4,637	3,923	4,189	3,934
India	89	166	179	187	149
Japan†	156	960	1,213	1,348	1,419
U.S.A.‡	395	532	500	545	527

(a) Comparable figures not available.

*U.K. given both by weight and square yardage for convenience of comparison.

†Excluding items recorded in pieces (chiefly goods of narrow width) up to 1927. For 1928, includes all piece goods exported, and is given in million square yards.

‡Pre-war figures in linear yards, post-war in square yards.

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Notwithstanding the increasing keenness of competition, until 1913 the Manchester export trade appeared to be holding its own. By the demands which it made upon the nation's man-power, productive capacity, and shipping, the war caused a considerable reduction in the supply of British goods in nearly all markets. A stimulus was given to the development of local industries, in countries which had previously been wholly or mainly dependent upon imports, while imports from countries less directly affected by war restrictions also increased, to fill the deficiency. When British trade was free to flow once more in its accustomed channels, goods produced within the market, or in other foreign countries, were too firmly established to be easily displaced. In 1919 and 1920, exports of British piece goods had shrunk to 50 per cent., and 65 per cent., respectively, of the 1913 figure. The slump of 1921 further reduced them to 43 per cent. of 1913, and although they have since moved upward, they have not yet reached two-thirds of the pre-war volume. (Tables 4 and 5.)

TABLE 4.

U.K. Exports of Piece Goods by Kind.

	1913	1924	1925	1926	1927	1928*
			(million	linear yards)		
Grey, unbleached	2,357·5	1,402·3	1,303·1	1,121·6	1,197·9	996·7
Bleached	2,045·2	1,413·2	1,522·0	1,284·7	1,337·4	1,340·8
Printed	1,230·8	728·7	777·1	593·1	656·6	624·7
Dyed in the piece	1,151·4	858·0	831·8	751·8	823·7	826·7
Dyed in the yarn (Coloured cottons)	290·4	182·9	202·7	171·6	173·6	162·5
TOTAL ..	7,075·3	4,585·1	4,636·7	3,922·8	4,189·1	3,951·

*Estimated on basis of relation between linear and square yardage in 1927.

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TABLE 5.

U.K. Exports of Cotton Piece Goods (million linear yards).

	1913	1924	1925	1926	1927	1928*
TOTAL	7,075·1	4,585·1	4,636·7	3,922·8	4,189·1	3,951·4
To Far East ..	4,157·6	2,205·1	1,973·4	1,971·7	2,026·7	1,927·1
British India	3,057·3	1,553·2	1,335·5	1,460·0	1,550·7	1,375·3
China (includ. Hong Kong	716·5	320·6	191·3	193·9	117·1	209·1
Rest of Far East ..	383·8	331·3	446·6	317·8	358·9	342·7
To South America	562·1	397·0	475·6	370·8	366·9	378·1
Argentina ..	199·1	162·3	172·6	121·0	137·9	156·6
Brazil	96·5	56·1	78·8	72·3	72·0	65·1
Chile	61·7	32·4	53·3	39·9	42·5	29·9
Colombia ..	73·6	44·5	68·7	57·6	46·9	50·2
Venezuela ..	34·7	39·3	48·7	33·2	24·4	28·8
To Cent. America	169·9	95·3	95·6	81·1	68·5	73·1
Mexico	22·9	18·0	27·6	25·9	13·9	20·3
British West Indies ..	29·0	19·8	21·8	17·4	18·8	25·3
To Near East (incl. Balkans) ..	782·7	606·4	680·8	394·4	494·9	304·2
Egypt	266·6	222·2	265·8	139·0	178·9	144·0
To Africa	343·6	277·8	398·6	310·3	340·0	393·1
Union of South Africa ..	71·7	73·1	74·1	75·5	76·2	64·4
British West Africa ..	144·6	99·4	181·7	126·2	167·6	238·2
Morocco ..	60·4	74·0	64·7	57·0	62·7	74·8
To U.S.A. and Canada ..	157·1	213·0	135·5	97·5	93·4	79·1
To Australia and New Zealand	210·7	184·1	203·9	210·9	217·1	171·7
To Europe (excl. Balkans) ..	369·6	441·8	480·9	334·0	398·4	323·7

*Converted from square yards on the basis of the relation between linear and square yards for the corresponding group or country in 1927.

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The explanation lies partly in the industrial and commercial development both of our customers and our competitors, and partly in the after-effects of the war, which impoverished the world and put a premium on cheapness, rather than quality.

India

The Indian market is the world's largest consumer of grey cloth, which constitutes about 40 per cent. of the total imports of piece goods. Imports of grey cloth during recent years have been about 800 million yards a year, of which Great Britain supplies the greater part, though Japan has doubled her share of the trade since 1924. Standardised goods, of relatively low grade, made chiefly of Indian cotton, appear to be growing in favour, and in these both Indian and Japanese mills are making considerable headway against the staple British lines. Bleached goods come next in importance to greys in India, comprising more than a quarter of the total imports, and Lancashire contributes nine-tenths of the Indian imports of this class, though competition has made the business much less attractive than it was even a few years ago. Printed, dyed and coloured woven goods together account for the remainder of the trade, and here also Great Britain retains the largest share, but in the face of strengthening opposition from Japan and Italy. British trade with India is largely conducted on the indent system, which is based on the demand expressed by Indian dealers in the bazaars. Their orders are cabled to Manchester by the Indian and European importing houses, each of whom is usually in close touch with a small number of Manchester merchant firms. Prices are cabled back and if not acceptable, counter-offers are frequently made, or the enquiry is addressed to another Manchester firm. Sometimes days may pass before an order can be definitely booked, if there is much disparity between the bazaar's idea of price and that which the Lancashire manufacturer is willing to take. Under this system goods often do not begin to be made until an order has been received in Manchester. In contrast to this method is that employed by some Manchester firms, of shipping, more or less regularly, supplies of standard goods, which may be sold "to arrive," or from stock. This is also the method by which the bulk of the Japanese trade in India is done. It has the merit of reducing delays in delivery, and where style or quality does not vary from one season to another, or between different markets, it enables the merchant to quote prices which reflect the economies

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attained in mass production of such goods. It is possible that in the future a larger part of Manchester's business with India will be done on these lines. One of the immediate problems which the general adoption of this system would create is that of maintaining distributing branches in various parts of India, since the successful distribution of standardised goods depends more on vigorous salesmanship than on the quality of the goods. The differences between one brand and another in the same standard line are often insufficient in themselves to attract the consumer's notice.

The Far East

After India, China is the most important market for cotton textiles. Potentially, indeed, its interest exceeds that of India, since its population is nearly twice as large, and its capacity for cotton goods has never been really tested. Internal disorder covering with varying degrees of intensity the last twenty years has hampered China's normal economic development, but the steady growth of her foreign trade, and especially the increase in her consumption of cotton goods, famine and civil war notwithstanding, suggest that with peace and order China may become the chief cotton consuming country in the world. There is already a rapidly expanding cotton industry in China, mainly in Japanese hands, but the import trade is still over 1,000 million yards a year. Geographical and other advantages enabled Japan to replace Great Britain as the chief source of supply, during the war, and she has since further developed her contracts in the Chinese market, at the expense of the Lancashire trade. Japanese piece goods exports to China were valued at nearly £16 million in 1927, and at over £18 millions in 1928, in spite of a political boycott on Japanese goods in China. British exports in the same years were nearly £4 millions and £6½ millions respectively. Printed and dyed goods are the most popular in the China trade, and of these Japan supplies nearly two-thirds. In bleached goods Great Britain has a large share of the trade, and has benefitted by the ban on Japanese goods. Under normal conditions the trade has been fairly evenly divided between the two countries. A notable feature of the China trade, as it concerns Manchester, is the auction system. The auctions are conducted by British importing houses at Shanghai, closely connected with Manchester, at weekly intervals. They have had a considerable influence in maintaining the sale of British goods, but the consignment of goods in anticipation of orders to Shanghai or Hong Kong, is also a common practice.

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The Dutch East Indies are the next largest market for cotton goods in the Far East. The trade, which was once almost entirely Dutch or British, is now divided between Holland, Great Britain and Japan. The successful exploitation of this market by the Japanese a few years ago has forced both Dutch and English merchants to seek other outlets for their goods, with a resultant increase in competition. Bleached goods are the largest single item in the trade, and come mainly from Holland, though Lancashire supplies about 20 to 25 per cent. of the imports. Even among those which are credited to Holland a substantial amount is also of Lancashire origin, having been imported into Holland, either bleached, ready for re-export, or for bleaching in Holland. The Straits Settlements, Siam, Ceylon and the Philippine Islands are also large consumers of cotton goods, and together take about 120 million sq. yds. a year of British cloth.

Middle and Near East

The principal Near-Eastern market is Egypt, which, with Syria and Turkey, consumes about 600 million yards a year. Grey and bleached goods account for nearly half the total trade, followed by prints, coloured woven and dyed goods in descending order of importance. Persia and Iraq are large markets for coloured goods (including prints and piece dyed goods). In Egypt competition is mainly between Great Britain, Italy and Japan. In Persia and Iraq, India is Manchester's chief rival. The relations between Manchester and the markets in this group are closer than in most others, since many of the importing houses are actually or in effect branches of Manchester houses, or *vice versa*. This, however, has not enabled Lancashire to withstand the influx of large quantities of standard Japanese goods. In the Sudan, Japan has supplied nearly half the total trade in recent years.

East and South Africa

In the British and foreign colonies of East Africa the chief items in demand are grey goods and cotton blankets. Japan and India have established themselves in this market, but Great Britain has until recently, enjoyed a virtual monopoly of the trade in bleached, dyed and printed goods. Holland is now entering the market in these goods, mainly as a result of her losses to Japan in the Dutch East Indies. In South Africa the British share of imports is still over 50 per cent., though ground has been lost to Japan and Italy. The demand of

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the native population is mainly for cotton blankets and cheap drills, while that of the white inhabitants is for heavy-weight hard-wearing fabrics and for household cottons. Distribution in South Africa is mainly controlled by English houses, whose head offices are in London or Manchester. This circumstance has probably helped to maintain Manchester's share of the trade. During the last few years many foreign firms have begun to imitate the British method, with some success.

West and North Africa

The remaining African markets may be divided into two classes, those in which British and foreign goods are on an equal footing, and those in which British goods are handicapped by tariffs. British West Africa is the chief market in the first category and it is noteworthy that although British goods have no tariff advantages over others they have no important competitors. In Morocco also, until recently, British goods commanded the market. France and Italy have, however, considerably developed their trade in Morocco since 1927. In spite of the tariff in French West Africa, more than half the imported piece goods are of British origin.

Central and South America

Covering, as they do, half a continent, the Latin American republics offer considerable variety in demand. The proximity of the United States, with an expanding surplus production, and the rise of protected local industries, have restricted British trade in some countries, though the superiority of British bleached goods is manifest even in these. In the Argentine, which is the largest market, Great Britain leads, with the United States, Japan and Italy as her nearest competitors. Colombia is another important consumer of British piece goods. Owing to the great distances which often separate the consumer from the importing centre, and the uncertainties of agriculture, long credits are common in the South American trade. In this respect Manchester has proved better able than its rivals to meet the customer's requirements and though other methods have been successful in gaining business temporarily, it appears that British methods commend themselves generally and in the long run.

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Europe, United States and British Dominions

Although they differ considerably in the character of their demand, and to a less extent in the organisation of their textile import trade, the Western European countries, the United States and the remaining British Dominions may be regarded broadly as a single group. They resemble the home trade, with which, in fact, they tend to overlap, more closely than any other overseas markets. Allowing for climatic conditions their demand is not dissimilar from that of the British market, and they are, in many types of goods, mainly influenced by the same tendencies of fashion and design as British consumers. Moreover, in nearly all the countries included in this group there exist local cotton industries, which are in most instances, protected by tariffs. Though their consumption is potentially enormous, they offer fewer immediate prospects of expansion for British trade than do the greater markets of Africa and the East. The United States, Australia and Canada are the largest markets. In the United States, Great Britain has a considerable lead over her nearest competitor, Switzerland. But in Canada, the United States has outstripped this country. Japan is developing her Australian trade, but is still a long way behind.

Conclusions

A truthful account of the export trade of Manchester could scarcely omit references to the severity of competition and to the losses which have been inflicted on Manchester by the growth of younger industries in other countries. The other side of the position is reflected in the map of Manchester's overseas markets, (Fig. 22) in the charts of international yarn and cloth exports, (Figs. 24 and 25) and in the diagram showing consumption of British and foreign piece goods in some of the largest cotton using areas (Fig. 23). It will be seen from these that Manchester is still the chief source of supply in many markets, that her share is the largest single item in the imports of many others, and Lancashire's exports of piece goods are still double those of her nearest competitor. These facts must be recalled, since there is a tendency to believe that Lancashire's day is over, and the glory of Manchester departed.

The man who is at the top of a ladder is easier to dislodge than the man who is only on the first few rungs. It says much for the tenacity of the Manchester man and for the quality and price of Lancashire goods, that the most determined shaking of the ladder has not brought

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them to the ground, but has left them fairly secure half-way up. Possibly, a half of the world's international trade in cotton goods is as large a share as Manchester can hope to retain, in the face of progressive and aggressive industrial developments in almost every important market. But there is no immediate limit to the amount of goods which that half, or even a smaller proportion, may represent.

During the last few years, the cotton industry and its methods of distribution have been subjected to frequent criticisms. Among the keenest critics have been those who are engaged in the trade themselves. The whole organisation of production and distribution has been closely reviewed and improvements have been suggested wherever they were needed. Manchester is aware of the changed conditions of world trade and is in process of adapting its slowly-evolved economy to meet them. Its past success has been based on the policy of giving the customer what he wants. If the customer is no longer willing to pay for the privilege of choice, a large part of Manchester's future prosperity will depend on its ability to give him what it is convenient to Manchester to sell. There is every indication that Manchester can deliver the goods.

SECTION III.—THE HOME TRADE

The line of demarcation between the home and the export trade has probably never been very clear, and to-day it is almost indistinguishable. This does not mean, however, that there are not marked differences between the two trades.

The shipping merchant sells to an importing house in the overseas market, which sells in turn to a wholesale distributor, who sells again to the retailer. In the home trade the merchant or wholesaler is in closer contact with the retailer, to whom as a rule, he sells direct. Many firms however, are engaged in both home and export trade, and many types of cloth are common to both trades.

Manchester shares the task of supplying the home market with London, which has obvious advantages in some directions as a distributing centre. The war checked a tendency which had previously been evident, towards the strengthening of Manchester's position as a source of supply. Probably the bulk of the goods intended for home consumption, which pass through Manchester, are handled by less than 40 firms. Their

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fewness stands out in contrast to the number of merchants engaged in the export trade, and is indeed disproportionate to the difference in size between the two branches of the trade. An exact measurement of the extent of the home market is not possible, since if we deduct exports of piece goods from total production, and add retained imports, there remains an unknown quantity of cotton goods which are exported in the made-up state, and a further indefinite quantity of imported made-up goods. As an approximate estimate of the relative importance of the home market, the following figures may be useful :—

	U.K. Production of Cotton piece goods million yds.	Exports million yds.	Retained Imports million yds.	Available for Home Market and Export as made-up goods, &c.	
				million yds.	% of Production
1907	7,088	6,298	65	855	12.5
1912	8,044	6,913	98	1,229	15.2
1924	5,426	4,606*	31	851	15.7

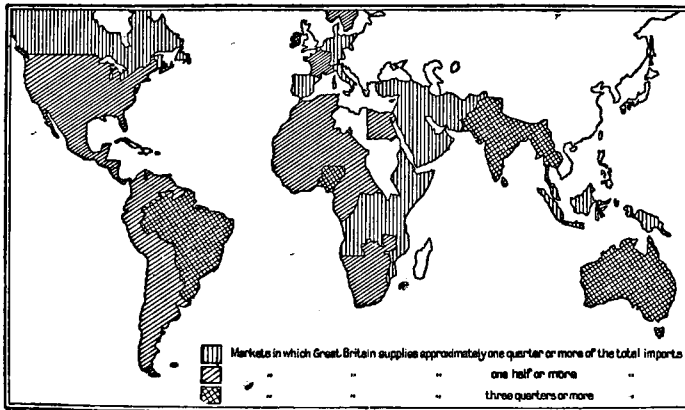
*Excluding exports to Irish Free State.

In addition to the trade in cotton goods, Manchester has an increasing business in woollen and worsted, silk, and artificial silk goods, either pure, or mixed with cotton. It is, in fact, largely owing to the greater popularity of such goods that the fall in the apparent home demand for cotton goods, between 1912 and 1924, must be attributed. Changes in fashion, possibly as much as trade depression, are responsible for a considerable decline in the consumption of cotton goods within the British Isles, but they have not caused an equivalent diminution in the volume of business done by Manchester houses. At one time, Manchester was mainly known as a buying centre for heavy cotton fabrics—the “Manchester goods” of the drapery trade. These include principally household linen, sheets, towellings and the like. There has been, however, a considerable expansion of interests since the beginning of the century and Manchester now ranks with London, in the quality, if not in the volume, of its business in fancy goods. Several new firms have been established to specialise in this end of the trade, and most of the older firms now include large fancy departments.

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Within recent years there has been a desire on the part of some manufacturers to sell direct to retailers, without calling on the services of the wholesaler. So far this has been confined to the makers of widely advertised and branded goods, who feel, possibly, that the wholesaler has no interest in building up a trade in which the goodwill belongs not to himself but to the manufacturer. On the other hand, the size and buying power of many of the great department stores enables them to place orders with manufacturers which are comparable with those of the wholesaler. It seems unlikely that these methods will develop much beyond the two fields in which they are especially applicable. The justification of the wholesaler is that he can offer his customers a wider selection than most individual manufacturers, and that he saves manufacturers from maintaining an army of travellers. Unless the department store ousts the small shopkeeper completely, or unless manufacturers combine to produce considerable variety of product within a single firm, the wholesaler's tenure seems secure.

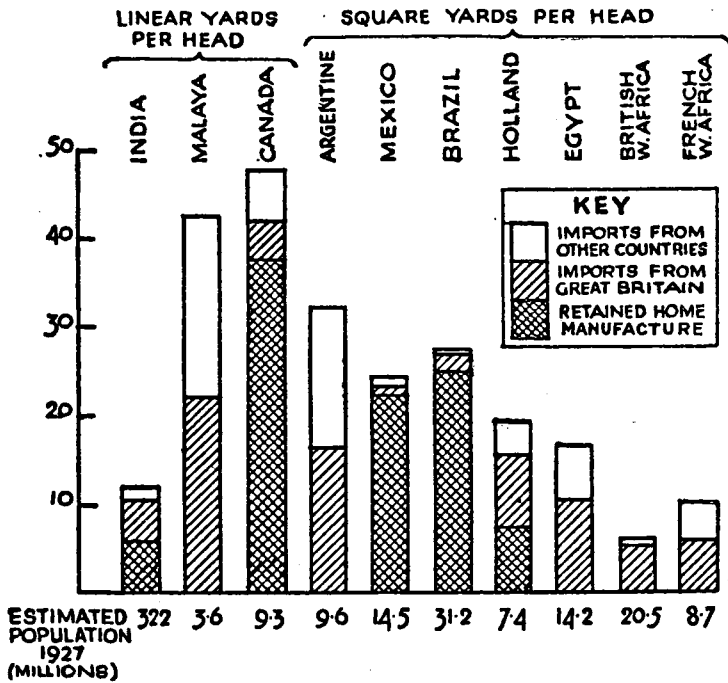
Fig. 22. Markets for Lancashire Cotton Goods.



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Fig. 23. COTTON PIECE GOODS.

Home Production, Imports from Great Britain, and Imports from other Countries in certain Markets.



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Fig. 24. Exports of Cotton Yarn (millions of lbs.).

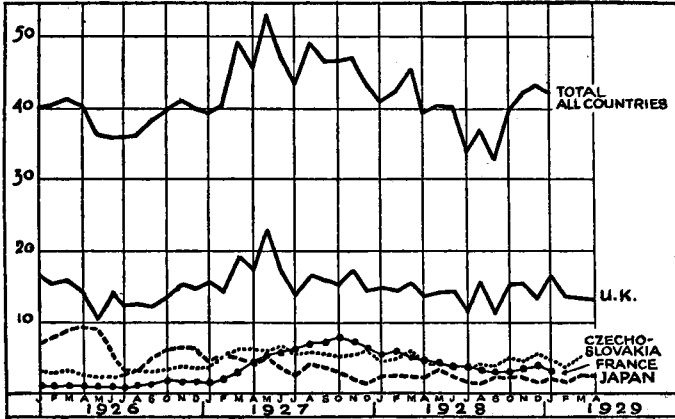
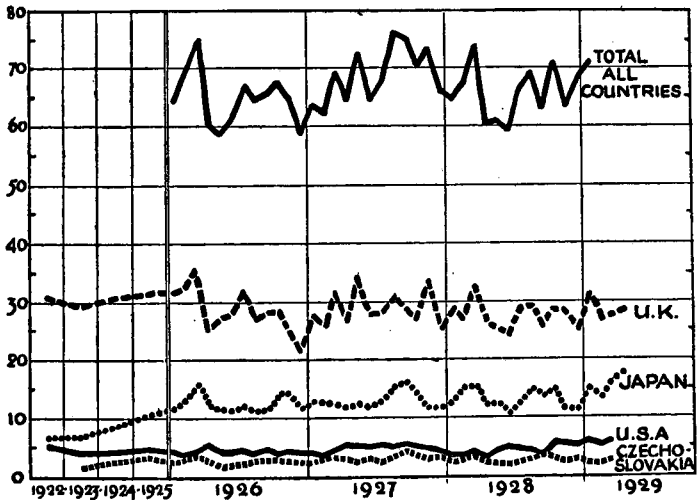
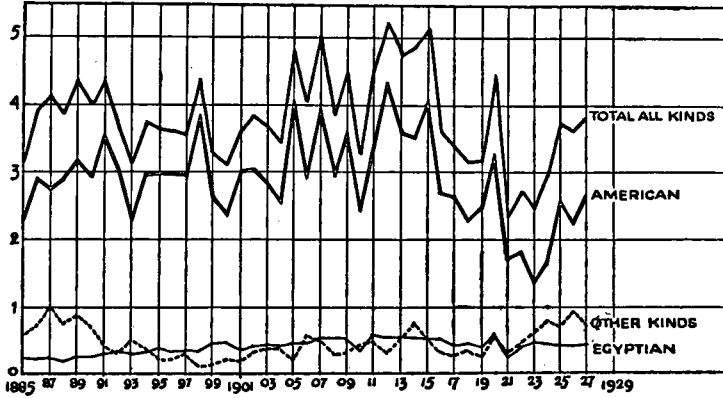


Fig. 25. Exports of Cotton Piece Goods (thousands of metric tons).



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Fig. 26. Imports of Raw Cotton into Great Britain (millions of bales).



Other Kinds include :—East Indian, Brazilian, Peruvian, Sudan, West Indian, East and West African, Australian.

Up to 1899, imports are for Calendar years ; from 1900 to 1914 imports are for years ending August 31st ; from 1915 onwards, imports are for years ending July 31st.





CHAPTER VI.

MANCHESTER AS A MARKET

By E. ALLEN, M.A.



SECTION I.—FOOD REQUIREMENTS OF GREATER MANCHESTER

THE question that rises naturally in the mind is, bluntly, Manchester as a Market for what ; and perhaps the best clue to the answer is to be found in the following characteristic passage by Dr. Cannan :

“ Consider the daily feeding of London. There are six millions of people in and about London so closely packed together that they cannot grow anything for their own consumption and yet every morning their food arrives with untailing regularity so that all but an infinitesimal fraction of them would be extremely surprised if they did not find their breakfast ready to hand. To prepare it they use coal which has been dug from great depths hundreds of miles away in the Midlands or Durham : in consuming it they eat and drink products which have come from Wiltshire, Jamaica, Dakota, or China, with no more thought than an infant consuming its mother’s milk.”

And wherein its value as a clue exactly lies may be seen if we supplement it with an equally characteristic passage from Sir Ernest Benn’s little book called “ Trade.” With the aim of discovering how much of our activity is linked up with trade he examines “ the doings of a normal man in a normal day ” and taking the bank clerk as “ a good average specimen of the majority of us as we live in the year 1927 ” finds that amongst the many things that make up his day he (1) “ comes down to breakfast to drink tea, coffee, or cocoa as he

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fancies, sweetened with sugar, swallows a mouthful of marmalade," that (2) "on his way to the City he buys a newspaper, tobacco and matches," and that (3) "on returning home at night he has a currant bun or a piece of chocolate cake with his tea and a supper of frozen meat, after which he sits on a little grass lawn or tends his roses."

There are many parts of that statement at which readers, and particularly northern readers, will be inclined to cavil. They do not ordinarily conceive of our city clerk as having time to pause on his inward morning journey "to buy newspapers, tobacco and matches," nor, in the climate to which they have, under duress, grown resigned do they, after supper, sit on their little grass lawns, but if we accept these modifications then it does at least give us, together with Dr. Cannan's statement, our clue in full. We are to be concerned with articles of food and it is to be our business to show to what extent this area of Greater Manchester is a market for meat, tea, coffee, bread, vegetables and fruit, and all the other commodities which make a regular appearance on its tables.

On this subject precise information, except in patches, is lacking. Precise information there may be about the provision of certain kinds of food through certain well defined channels as, for example, there is about the provision of meat through the City's wholesale Meat Market, but precise information of total consumption and for all food commodities there is not. It is, therefore, necessary to attempt some sort of estimate.

We can begin this by examining first of all the figures of the family consumption of certain standard food commodities which were published by the Board of Trade in 1903 and 1904. These were compiled from the answers to a number of questionnaires which had been distributed amongst members of the working classes and were intended to show the usual consumption standards of working class families. Roughly 2,000 returns were used and they covered the whole of the United Kingdom. Fortunately they were divided into areas. Of these one was the North-west, and since it was built up to a considerable extent of answers received from Lancashire industrial towns we may take the figures given for that area as the starting point of our enquiry. They were as follows :

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Commodity	Consumption per family per week
Bread and Flour	29·14 lbs.
Rice, tapioca and oatmeal	1·88 lbs.
Potatoes	13·78 lbs.
Meat	6·18 lbs.
Bacon	1·54 lbs.
Milk	9·28 pints
Cheese	0·68 lbs.
Butter	2·41 lbs.
Eggs	12
Currants and Raisins ..	0·86 lbs.
Tea	0·57 lbs.
Sugar	5·63 lbs.
Coffee and Cocoa	0·26 lbs.

If we now take a figure showing the average family in the area and one giving its total population we shall be able to obtain a figure, namely the number of such average families in the area, which, multiplied by the annual consumption of each commodity per family, will represent the total annual consumption of that commodity in the area. In the Lancashire volume of the 1921 Census Returns the average family was given as 4·27 persons, and a map printed recently in a "Manchester Markets' Review" shows that inside a circle whose centre is Manchester and which has a radius of 25 miles there is a population of 4,345,579 people. For our present purpose this last figure, however, seems a little too large. The circumference of the circle impinges on areas which are more allied to the Potteries, Liverpool, and the West Riding of Yorkshire than to Manchester. We may, therefore, both simplify our calculations and make a truer approximation to fact if we call the population of our Manchester area, 4,000,000.

If that is granted then we have 936,768 families and the annual consumption of the area is as follows :—

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An Estimate of the Quantities of Food of different kinds needed in the area.

Commodity	Consumption per family weekly	Consumption per family annually	Estimated consumption of the area
Bread and Flour ..	29·14 lbs.	1,515·28 lbs.	12,674,000 cwts.
Rice, tapioca and oat-meal	1·88 lbs.	97·76 lbs.	818,000 cwts.
Potatoes	13·78 lbs.	716·56 lbs.	5,993,000 cwts.
Meat	6·18 lbs.	321·36 lbs.	2,688,000 cwts.
Bacon	1·54 lbs.	80·08 lbs.	670,000 cwts.
Milk	9·28 pints	482·56 pints	452,047,000 pints
Cheese	0·68 lbs.	35·36 lbs.	296,000 cwts.
Butter	2·41 lbs.	125·32 lbs.	1,048,000 cwts.
Eggs	12	624	584,543,000
Currants and Raisins	0·86 lbs.	44·72 lbs.	374,000 cwts.
Tea	0·57 lbs.	29·64 lbs.	247,910 cwts.
Sugar	5·63 lbs.	292·76 lbs.	2,449,000 cwts.
Coffee and Cocoa ..	0·26 lbs.	13·52 lbs.	113,081 cwts.
Oranges	—	—	668,000 cwts.
Apples	—	—	1,100,000 cwts.
Bananas	—	—	1,080,000 bunches
Pears	—	—	8,800,000 lbs.
Plums	—	—	13,040,000 lbs.
Cherries	—	—	4,640,000 lbs.
Currants (raw) ..	—	—	4,120,000 lbs.
Strawberries ..	—	—	9,040,000 lbs.
Gooseberries ..	—	—	6,800,000 lbs.
Raspberries ..	—	—	2,000,000 lbs.
Tomatoes	—	—	34,000,000 lbs.

To this table we must add certain points of explanation and modification. Let us deal first with the addition that has been made by giving estimates for the consumption of the various kinds of fruit. The questionnaires of the Board of Trade in 1903 did not cover these fruits and, therefore, seeing that their consumption figures have been arrived at independently it is only desirable that some hint should be given of the manner of their calculation.

As regards oranges and bananas the manner was simple and, for lack of a precise alternative, arbitrary. The retained imports in each case were averaged over the five years ending and including 1927 and the resulting average per annum was divided by a figure obtained by averaging the population of the United Kingdom over the same period. The figure thus obtained showed the consumption per head and was multiplied by 4,000,000 to show the estimated consumption of the area. The same method was used for apples except that here an addition had to be made for the home crop. To the average of imports retained there was added the croppage of apples as given in the Returns of the Ministry of Agriculture for 1927. This last figure, it is true, covers only England and Wales, but since it is in this part of the United Kingdom that almost the whole amount is cropped no great discrepancy is likely to have been caused.

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The estimates of consumption for the remaining items are based on particulars given in a report on the marketing of fruit issued by the Ministry of Agriculture in 1927. In an appendix to that report figures are given to show the consumption per head of fruits of this kind, and the average consumption per head for the last three years given has been multiplied by 4,000,000 to indicate the share in total consumption which can be attributed to the area. The method, it must be admitted, is again arbitrary and a further complication is added in most of these remaining items in that quite a large proportion of them must reach the consumer in the form of jams and confections of various sorts and not in the raw state. The figures, therefore, cover all the uses to which these various kinds of fruit are put, whatever their final form.

Certain modifications seem to be demanded by tendencies in consumption which have shown themselves since 1904.

The first is in connection with the figure previously given for milk. The intensive campaigns that have been waged during the last ten years in favour of "more milk" must almost certainly make our figure an understatement. It needs writing up: and it would probably be nearer the truth to write the total consumption in the area, not as 452 mn. pints but as 452-500 mn. pints with the emphasis on the 500.

The table would also seem to be guilty of an understatement in the case of meat and bacon. The Royal Commission on Food Prices in its first report (1925) suggested that "the consumption of beef, veal, mutton, lamb and pork, may be reckoned at about two pounds per head per week" and that "if to this are added bacon, poultry, rabbits and miscellaneous meat products the total consumption of meat of all kinds works out at about 2½ lbs. per head per week."

At the same time, however, they are careful to point out that "the aggregate consumption of beef, veal, mutton and lamb per head is much the same as in the years immediately preceding the war." This is important. On the basis of the Commission's figures for consumption per head the area would need 3,714,000 cwts. of meat per annum. The estimate given in our table was 2,688,000 cwts., roughly a million less. The total estimate for all kinds of meat would be on the Commission's basis, 4,643,000 cwts. and 3,358,000 on the basis of our table. It is here that their statement to the effect that aggregate consumption per head remains roughly the same as just before the war becomes important. This, together with the fact that the table is based on *purely* working-class households while the Commission's figure covers *all* households, whatever their income scale supports the view that the real discrepancy is not as great as the margin between the two figures seems to suggest. Some change, however, there certainly has been since 1903 and some allowance should be made for it. It is difficult to know how much, but it would not be either unreasonable or issue shirking to put consumption at 3½-4 million cwts, again with the emphasis on the second of the two figures. The Royal Commission on Food Prices again offers material for comparison in its section on "bread." It is stated (page 21) that if the 4-lb. loaf be reckoned at 9d. then the total annual expenditure in Great Britain and Ireland is £80,000,000 on bread alone. This means that

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just over 2,133 million four-pound loaves, that is, just over 8,533 million pounds of bread, are consumed. A short sum in arithmetic further shows that this means an annual consumption of 177 pounds per person and 6,321,428 cwts. of bread in the area. This must now be compared with the estimate based on the table given by the Board of Trade. In the table already given bread and flour have been combined but in the information on which it was based was one item giving the weekly family consumption of bread as 10 pounds. Working on this figure the area's consumption of bread would be only 4,349,280 cwts. as against the 6,321,428 cwts. derived from the later data. Such a difference is serious but the information available is too scanty to justify any choice between them. Unsatisfactory though it may be the only course left is to place them both before the reader with perfect impartiality and suggest that we should have classic authority behind us in believing that the truth lay somewhere in between.

A final item which is capable of being checked in a general way is the figure given for tea. It is suggested by the estimate that the requirements of the area amount each year to about 250,000 cwts. If the retained imports of tea in the United Kingdom are averaged over the five year period ending with 1927 and the result divided by an average of the population during that time then the retained imports of tea per head work out at roughly 8·3 pounds per annum. On this basis the requirements of the area would be roughly 300,000 cwts. It is not a marked divergence when account is taken of the different basis of the two calculations, and it would have been surprising had a perfect tally been found. Since, however, it is known from general trade tendencies that the consumption of tea has increased it will again be wiser to adopt the twofold figure and suggest as an estimate of the area's requirements, 250,000-300,000 cwts per annum.

We can now assess the modifications called for in the original table by these comments. Round figures only will be given. The general indefiniteness of so much of the material handled makes any other course ludicrous. Working on these lines the result is as follows:

Generalised estimate of the food requirements of a defined area of Greater Manchester.

Bread and Flour ..	millions 12·7 cwts.	Coffee and Cocoa	millions 0·1 cwts.
Rice, tapioca and oatmeal	0·75 cwts.	Oranges	0·7 cwts.
Potatoes	6·0 cwts.	Apples	1·0 cwts.
Meat	3·5-4 cwts.	Bananas	1·0 bunches
Bacon		Pears	8·8 lbs.
Milk	450-500 pts.	Plums	13·0 lbs.
Cheese	0·25 cwts.	Cherries	4·5 lbs.
Butter	1·0 cwts.	Currants (raw) ..	4·0 lbs.
Eggs	585	Strawberries ..	9·0 lbs.
Currants & Raisins	0·4 cwts.	Gooseberries ..	6·8 lbs.
Tea	0·25-0·3 cwts.	Raspberries ..	2·0 lbs.
Sugar	2·5 cwts.	Tomatoes	{ 34·0 lbs. 0·3 cwts.

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Convenient though it is as a method of representation, it is regrettable that the decimal system, like dark-blue suiting, diminishes rather than increases one's impression of size. Although, therefore, the main aim of this book is to give statistical information in as neat and compact a way as possible it may yet be permissible to show up the hugeness of this concentrated consumption in a bolder way than the table itself allows. Take meat. The greater part of it is supplied through the Wholesale Meat Market, and of the carcasses sold in a recent year in that market it has been graphically said that if they were considered as live animals walking in procession, four abreast, then "such a procession would extend from Manchester to London." And, finally, take tea. It is stated on good authority that from a quarter-of-a-pound of tea the housewife ordinarily obtains 30 cups of tea. If this is so, then taking only the lower of our figures Greater Manchester as defined here is annually responsible for a consumption of no fewer than 3,360,000,000 cups—a result not unworthy of the Astronomer Royal himself.

SECTION II.—MANCHESTER AS A FOOD DISTRIBUTING CENTRE

This is not the only way, however, in which the importance of the area as a market for food products can be thrown into relief. A further way is to be found in an examination of some of the links in the chain that connects consumer with producer. In that chain an important part consists of organised wholesale markets and in the area we are studying Manchester is regarded from the marketing point of view as a key centre. It, therefore, we can assess the amount of work done by the City's markets each year we have a further beam of light upon the area's needs. There is this caution, however, to be added. It must not be expected that the area covered by the figures for the City markets will correspond exactly with the area which has up to now been the basis of our enquiry. Dependence upon Manchester's markets varies considerably. Enquiry shows that for the towns lying close to Manchester, within, say, a 10-mile radius dependence is great. At Blackburn, 24 miles from the centre, the position is different. It may be regarded as almost a distributional centre in itself. It has an important Fruit and Vegetable Market, the third largest in the county, a grower's market, a cattle market, an abattoir and wholesale meat market, a wholesale fish market owned by the L.M.S. Railway Co., a

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retail fish market and two general retail market halls. It draws much of its home supplies directly from the producing districts, from Kent, Worcestershire, the districts around Preston and the Fylde, Cheshire and Lincolnshire : and it also draws largely for supplies of imported fruit upon Liverpool, London, Glasgow, Hull, Southampton and Grimsby. A Ministry of Agriculture and Fisheries Report on Markets and Fairs (Economic Series, Number 19) sums up the position by stating that "the market not only supplies Blackburn itself, with a population of 127,000, but it also supplies east Lancashire towns such as Accrington, Burnley, Chorley, Clitheroe, Darwen and Nelson as well as the west coast towns of Barrow-in-Furness, Blackpool, Fleetwood, Lytham St. Annes, Morecambe and Southport." Other towns, too, have their markets. Bolton has a wholesale and retail fish and poultry market, and wholesale and retail markets for the sale of fruit, vegetables and dairy produce. Wigan has a wholesale fruit and vegetable market, over 15,000 square yards in extent which provides with their supplies not only local retailers but also retailers from nearby towns.

Here then within our circle with a 25-mile radius of Manchester are fairly considerable centres of self help. We must ask whether their existence means that the light, thrown by examination of the trade of the Manchester markets can only be fitful, or at least, short ranged. To some extent it certainly does ; but since it was never suggested that Manchester was the only key centre in the area and, since a large portion of the area, in spite of these inroads, undoubtedly does look to Manchester for a good deal of its supplies, particularly for fish and fruit, their significance is less than might at first be supposed. Even in the grower's market at Wigan, which is pre-eminently for home producers and is local in range, imported produce from Liverpool and Manchester is gaining a footing. Its hold, moreover, is stated to be increasing. The last word on the subject may perhaps be left to another of the Ministry of Agriculture's Economic Series, namely, that on the marketing of fruit.

Speaking of the area of 25 miles radius of Manchester they state that while it "includes several large towns which have their own wholesale markets they nevertheless depend on Manchester or Liverpool to supplement the supplies received directly from the various fruit-producing centres." They then follow this up on a later page of the same report with the statement that the commission trade which the other

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Lancashire wholesale markets had built up "has been somewhat checked in late years by the increasing use of motor transport by large retailers who can now make Manchester and Liverpool their buying centres." This summing up suggests that to omit a study of the work of the City's markets would be to omit an important factor in the distribution of food products in the area and, therefore, to lose an important index of consumption.

Before going on to that study in detail it would be more helpful, perhaps, if a short list were given to show exactly of what Manchester's markets consist. They are as follows :

The Markets of Manchester and Salford.

Table of Markets.

Market	Size in sq. yards	General character
Smithfield.. .. .	28,117 covered 159 uncovered	Fruit, vegetables, dairy produce and eggs, mainly wholesale : daily.
Campfield	—	Consists of a sale room for auction sales of imported fruit and vegetables : wholesale : Tues. and Thurs.
3 Fish markets :—		General retail (hardware, etc.) : Mon. and Sat.
(1)	4,226 covered	Fish, eggs, poultry, game, wholesale : daily.
(2)	1,334 covered	Fish, poultry, game : retail : daily.
(3) Victoria Fish market	989 covered	Fruit, fish, poultry : retail : daily.
Shudehill	297 uncovered	Wholesale and retail poultry : daily.
Meat market and abattoirs	17,090 covered	Meat : wholesale : daily
Smithfield, general ..	uncovered	General retail (hardware, etc.) : Sat.
Corn Exchange ..	2,308 covered	Grocery : wholesale, Tues. Corn, etc. : wholesale : Thurs.
Potato market (L.M.S. Ry. Co.)	4,340 covered	Potatoes : daily.
Animals Landing Wharf	—	Irish and imported cattle and sheep sales : usually Mon.
Pig market	3,620 covered 1,290 uncovered	Pigs : daily.
Salford Cattle Market	4,840 covered 33,880 uncovered	Private sales, cattle and sheep : Tues.
Salford, general ..	12,100 uncovered	General retail produce : Mon. : Sat. (There are also 3 markets in hides and skins.)

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Fruit and Vegetables

We may now take them one by one and study them in detail. Let us take first the Smithfield Fruit, Flower and Vegetable Market.

Owing to the way in which users of the market pay their market dues, no complete and continuous tables of produce handled can be compiled. The greater part of the users pay not tolls but rent for space, and therefore there is no check available to show the amount of the produce which passes through the market. All that we can do, therefore, is place before the reader such facts relating to size, activity, etc., as can be collected and let them speak for themselves. First then as to size. It is the largest in the Provinces and in area, 28,117 square yards of covered space, exceeds even Covent Garden, London. Some indication of its importance may, perhaps, now be gained by putting side by side with this the areas of similar markets in some of the other towns. The wholesale fruit and vegetable market in Blackburn has an extent of 2,585 square yards of uncovered space; and the grower's market in the same town an area of 7,443 square yards of uncovered space. At Bolton retail trade has a bigger share in the total trade of the market than is the case at Manchester, and the market area is 2,040 square yards of covered space and 5,154 square yards uncovered. In most other towns the markets are largely devoted to the retail selling of produce of a general sort and they, therefore, lie outside the limit of comparison. If, by themselves, these figures do not suggest that, taking into account the relative populations of the different towns, the Manchester market has any very special pre-eminence it should be remembered that while at these other markets retail trade is usually an important standby at Smithfield almost the whole trade is wholesale. Of the total market area purely retail trade occupies only 9 per cent.

We may return now to our catalogue of facts. It has been stated that directly or indirectly the amount of produce handled daily at Smithfield keeps busy between two and three thousand people and that during the selling season the number of toll-paying growers using the market reaches about 200 per day. Its regular tenants, mainly wholesale commission salesmen and merchants, number roughly three hundred. Bearing these things in mind, the matter is perhaps clinched for us if we quote a statement made in a recently published official handbook to the Corporation Markets to the effect that "so eagerly sought after are these stalls (this means in effect the space rented by the salesmen

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and merchants) that in 1927 when seven were to let there were forty-nine applicants, while in 1928 (year ending, March 31st) the number of applicants for fourteen stalls was eighty-five."

And finally, even though no figures are available to show the amount of trade done, at least some idea of the markets' importance may be gained by noting the sources which the market taps for its supplies and the destinations to which it sends them. All the home-producing centres are tapped, namely, Worcester, Hereford, Norfolk, Kent, and Cambridge for fruit, Cheshire, Lancashire, Lincolnshire, Yorkshire, Norfolk and, in addition to the shipments received directly at Manchester, supplies are regularly received through Liverpool, London, Southampton, Hull, Goole and Plymouth. Supplies go out over an area which, if not solid and compact, has at any rate many widely out-flung points. In it are such towns as Bolton, Oldham, Stockport, Warrington, Buxton, St. Helens, Halifax, Leeds, Bradford, Sheffield, Derby, Llandudno, and the "Five Towns" of the Potteries. A Potteries' wholesaler will send his motors to the Manchester and Liverpool markets and drop goods at his retailing customers as he returns, serving innumerable, and from the markets' point of view, anonymous little towns "en route." Such, for example, is the manner in which Congleton receives a good deal of its supplies: and doubtless what is true here is equally true for many other small towns on other routes. It is a clear case of doing good, albeit economic good by stealth and even though statistical record is impossible perhaps enough has now been said to show that Smithfield is a key centre for a wide consuming area.

Smithfield is not alone, however, as a wholesale buying centre for fruit and vegetables. Two other important markets in Manchester are the auction of imported fruit at Campfield, and the rail-head potato market in Oldham Road, owned and controlled by the L.M.S. Railway Company.

The Campfield auction was established in 1894 and was intended to foster direct shipment of supplies up the newly-opened Ship Canal. It is now firmly established as an important port auction and is attended by buyers from the whole of the north and the Midlands. It throws little light, therefore, on the consumption of fruit in the area, little light, that is, on the immediate area as a market for fruit, but clearly no account which failed to include its well-organised marketing facilities could be called complete. With this proviso then in mind, namely,

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that its scope is more than merely local, we may note that in a recent good year it handled over two million packages of fruit of many kinds. Its trade has shown considerable fluctuation but it would not be far from the mark to state that its more usual figure is now about a million and a half. As the following table shows an important part of its trade is done with Spain, mainly in oranges and onions. Together with trade in Jaffa oranges and apples, this covers the greater part of its dealings.

The mere statement of the number of packages handled, however, gives no indication of the total weight for unfortunately for our present purpose the packages are not uniform. Nevertheless a rough approximation to total weight can be made by taking the weight of the typical and usual package for each fruit and multiplying it by the number of packages. This has been done in the table for the year, July 1st, 1927-June 30th, 1928. It is interesting to compare the figure for oranges with the 668,000 cwts. we gave as the area's estimated consumption and the 535,943 cwts. given in the Trade Returns as being imported into the Ports of Manchester. It seems fairly clear from this that on the orange trade at least the Manchester Auction has secured a firm hold. Before giving the table we must add the further caution that again only general comparison is possible because the saleroom does not secure all its supplies *exclusively* through the Docks. It has built up the practice of supplementing its supplies when necessary from other sources.

Fruit at the Campfield Auction.

	Number of Packages			
	1922/23	1926/27	1927/28	1927/28 figures in tons
Spanish Oranges ..	813,754	407,424	538,122	24,664
Spanish Onions ..	382,162	275,021	196,279	14,020
Spanish Grapes ..	43,757	23,854	34,770	1,159
Jaffa Oranges ..	167,190	260,762	195,070	6,502
Lemons	47,399	51,593	27,627	1,105
Barrels of Apples ..	280,597	261,088	143,148	10,225
Boxes of Apples ..	182,686	119,817	107,071	2,677
Egyptian Onions ..	80,105	31,766	45,867	2,293

In addition there are many other small items making up the totals mentioned above.

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A further hint can be gained by noting the arrivals of the different kinds of fruit at the Manchester docks and some particulars relating to them are given later.¹ It is not suggested that the two sets of figures cover each other but they may be placed together to give an approximate picture owing to the close association that there has been all along between the Campfield auctions and the using of the Ship Canal for direct shipment, and secondly, because of the method by which fruit is auctioned in the saleroom. Samples of fruit are placed before the assembly of buyers, the main parcel of which is at the Docks awaiting the instructions of the buyer. The buyer in the sale-room sees, that is, only the sample package but is, in effect bidding for a consignment of produce lying at the Docks. Thus the speed at which selling can be conducted is considerably increased—to the uninitiated indeed, almost to the point of confusion, and the buyer finds a valued safeguard in that he can make a thorough inspection of his purchase at the Docks and cut out that wastage of time, money, and self-respect that follows from unsatisfactory purchases of fruit in bad condition.

The rail head potato market at Oldham Road confines itself, as its name implies, entirely to potatoes and draws its supplies mainly from Lancashire, Yorkshire, Lincolnshire and certain parts of Scotland and Ireland. Its main dealings are with local commission salesmen and in 1927 it handled 264,000 cwts. of potatoes, which though important and impressively large regarded by itself is, of course, only a small traction of the area's total requirements. Further, as is usual with railhead markets owned by a particular railway company and bound, therefore, to the area which the lines of that company serve its supply is subject to a marked seasonal fluctuation. This was admirably brought out in a report on the marketing of potatoes recently published by the Ministry of Agriculture as Number 9 in its Economic Series. Placing the supplies received at Oldham Road in January, 1924, at 100 and expressing the supplies of subsequent months in the form of an index with that month as its base they gave the following table :

January.. .. .	100	July	0·5
February	82	August	2
March	86	September	34
April	80	October.. .. .	80
May	67	November	100
June	2	December	70

¹See tabular statements at the end, Table 3.

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While the rail head market is practically at a standstill supplies in other markets will, of course, be flowing in freely, not only from abroad but also from such growing centres as Essex, Kent, Bedfordshire and Cheshire.

Meat

Information relating to the supply of meat through the market is, thanks to the fact that users pay, not rent for space, but tolls on the amount marketed, much more definite and precise. It may be divided into two sections, one to deal with meat on the hoof and the other to deal with it on the hook. Under the first, that is, we must study the movement and marketing of cattle; under the second the marketing of meat. The first, therefore, means an examination of such markets as the Salford Cattle market and the Manchester Pig Market, and the second an examination of mainly the Manchester Abattoir and Wholesale Meat Market.

Let us take first then the Salford Cattle Market. Its record is impressive and clearly it ranks easily as a key centre for livestock not only for Manchester and Salford but also for many of the adjacent towns. Almost 40,000 square yards in extent, with accommodation for 2,000 cattle and 15,000 sheep, lairage for almost 1,000 cattle and 1,000 sheep, and six banks it draws cattle from North Wales, Cheshire, Derbyshire, Yorkshire, Ireland, Cumberland, Westmorland and the Midlands and sends them to the Manchester Abattoir, to neighbouring towns and sometimes to towns in Cheshire and Derbyshire. Its average supply per week at the present time is roughly 800 cattle and 7,500 sheep, and of these it has been estimated that about 200 cattle and 3,000 sheep go to the Manchester Abattoir. These figures relate purely to cattle destined for the hook. In addition it sends out to adjacent towns for dairy purposes about 100 Irish dairy cows per week. We shall be wise, however, to guard against the impression that the dependence of the area is solid and unbroken. It is not. Other towns too have their cattle markets. Blackburn, for example, has a weekly livestock market through which there pass each year about 9,000 cattle and about the same number of sheep and lambs. Moreover, in 1927, it killed in its own abattoir 10,441 cattle, 79,745 sheep, 1,903 calves and 6,318 pigs. So far as cattle and calves are concerned it may be said, therefore, to be almost self supplying. Bolton, too, has a weekly livestock market handling during the year, perhaps two to

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three thousand animals. If a picture is to be formed, then, of the relation of the Salford market to the surrounding towns it must not be like a solid and unbroken circle but rather like a wheel with spokes of uneven length, minus a rim, and with a solid centre formed by the Salford and Manchester area itself.

In addition to this as a market for livestock we have the landing wharf, near the Ship Canal, which was provided by the Manchester Corporation in 1895 and the Pig Market owned and controlled by the L.M.S. Railway Company. The landing wharf, like the fruit auction at Campfield, was part of a programme to encourage direct shipment up the Ship Canal. It has covered space capable of holding about 2,000 cattle and 1,000 sheep, and is equipped in addition with slaughter houses, refrigerating plant, chilling rooms and facilities for dealing with the various slaughter house by-products. The footing it has gained may be gauged from the following figures showing landings at the wharf for almost the whole period of its existence.

Arrivals at the Animals' Landing Wharf:

Year Ending.

March 31st	Beasts	Sheep
1897	1,046	698
1900	8,955	3,739
1905	29,278	10,606
1910	29,779	—
1915	34,796	50,257
1920	27,880	25,033
1923	34,104	55,875
1925	23,785	23,865
1926	17,388	7,971
1927	18,382	14,349
1928	21,695	19,755

In addition there were 14,396 Canadian cattle in 1925, 22,440 in 1926, 7,959 in 1927 and in 1928 only 207.

The L.M.S. Pig Market, which deals only in live pigs, is open daily, and handles during the year between 70-80,000 pigs. It draws for its supplies upon most of the pig-rearing centres, notably Lincolnshire, Cheshire, Cambridge, Norfolk and Ireland, and sends them out to Manchester and its suburbs and most of the adjacent towns. Just as

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Salford was found to be, granted the qualifications we made, the key centre for cattle, so the L.M.S. Pig Market is the key centre for pigs. No other town in the north touches or even approaches its figure. In Appendix IV. to the Ministry of Agriculture's Report on Markets and Fairs (1928) a list was drawn up giving particulars of the number of animals passing through the various live-stock markets of the north in a recent typical year. The next below Manchester so far as the marketing of pigs was concerned was Newcastle-on-Tyne with roughly 40,000 and below that York with 30,000. Of the towns in our own area Blackburn ranked first with 1,058, Warrington next with 1,050 and Bolton third with 218. No other town inside the area is mentioned and the pre-eminence of Manchester in this market would seem to be unchallenged. And this latter is a remark which would seem to be equally true for all forms of live-stock combined.

We must now turn from meat on the hoof to meat on the hook—turn, that is, to a study of the Manchester Abattoir and the Wholesale Meat Market. So far as the dependence of the area upon Manchester is concerned the generalisation made about the marketing of cattle holds good. As was shown, Blackburn carries through a considerable amount of public Abattoir work for itself, and enquiry shows that in Bolton a considerable amount of private killing is done by the butchers themselves. Manchester is a standby on which they can fall back when their own normal channels of supply begin to fail them. Again, therefore, the correct picture to conjure up in the mind is that of the rimless, unevenly spoked wheel solid and continuous only at its hub. This is admirably brought out if we compare the two following tables with each other. The first gives the number of private slaughter-houses in the city, together with particulars of the number of animals killed in them during certain years, and the second gives the number of animals killed in the public Abattoir. As time has gone on the Corporation has gradually brought about a reduction in the number of private slaughter houses and a concentration upon the municipal abattoir. Contemporaneously with this there has been, as the figures show, an increasing use made of it, particularly for the killing of sheep and lambs. The change has been, on many counts, it would seem, for the public good: it would also seem that with the Corporation there lies, too, not a little responsibility for the fact that the term "butcher" when applied nowadays to a typical meat-seller of the city's suburbs is almost certain to be a "mis-nomer."

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Animals killed in the Manchester Abattoir.

Year ending March 31st	Beasts	Sheep	Lambs	Calves	Pigs
1883	34,001	82,939	24,493	1,019	6,285
1885	31,983	86,004	20,891	831	7,635
1890	30,020	97,473	24,639	717	9,287
1895	31,403	127,047	33,124	733	10,371
1900	34,675	106,855	45,595	872	18,163
1905	26,685	107,357	51,139	1,525	15,869
1910	38,389	193,855	57,553	2,179	10,486
1915	63,636	160,474	45,335	4,295	10,855
1920	88,622	212,707	48,656	9,447	9,768
1925	60,171	252,382	80,474	3,667	19,168
1926	54,027	271,127	76,400	5,192	16,106
1927	55,054	275,054	94,173	5,401	13,623
1928	65,386	330,894	111,286	5,518	18,584

Private Slaughter Houses in Manchester and Particulars of Animals Killed during certain years.

Year ending March 31st	Number of Slaughter- houses	Cattle	Sheep and Lambs	Calves	Pigs
1905	—	8,672	40,092	—	21,840
1911	76	8,059	34,009	210	21,482
1915	46	4,056	21,876	326	11,636
1921	37	3,513	20,063	408	6,713
1926	34	2,387	13,272	313	5,255
1927	34	2,472	13,302	380	6,318
1928	30	2,726	15,778	134	6,955

In view of what was said in introducing the two tables no further comment is needed. It may be important to add, though, that the extent of the killing and dealing makes Manchester a leading hide and skin centre. There are three hide markets not far from the abattoir itself, one held periodically by the C.W.S. and two held each Tuesday and Friday by private firms for both auction and private sales.

We may turn now without further delay to the Wholesale Meat Market. Opened in 1872, extended at various times since then as trade has increased, covering, together with the Abattoir which it adjoins, over 17,000 square yards, it is again a key market for Manchester and the adjoining towns. Of it a government report has said that

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“ the volume of trade now done probably entitles the market to rank next in importance to Smithfield Market, London.” That this view is at any rate not based on airy nothings may be seen from the following table :

Carcases passing through the Wholesale Meat Market, Manchester.

Year ending March 31st	Beef	Mutton	Lamb	Veal	Pork	Meat in Boxes: No.
1883	30,189	96,234	20,778	13,214	10,973	—
1885	29,194	113,325	17,661	11,886	10,060	—
1890	38,921	141,335	20,972	14,109	10,198	—
1895	51,238	223,067	32,288	19,048	15,075	—
1900	71,489	336,237	66,388	18,663	59,133	—
1905	82,929	331,358	88,880	15,704	50,071	—
1910	89,663	436,262	148,256	22,820	15,279	—
1915	103,911	417,720	159,767	21,441	26,930	19,103
1920	117,201	439,368	65,664	19,310	2,402	38,744
1925	110,925	556,235	223,471	34,708	36,582	62,411
1926	112,595	584,305	203,594	34,719	25,234	62,745
1927	107,828	621,406	236,105	32,037	21,815	49,889
1928	119,433	686,280	253,762	31,654	34,593	56,591

Calculating the trade according to weight and not, as here, according to the number of carcases, it has been shown¹ that in 1928 the market cleared over 34,000 tons of beef, almost 14,000 tons of mutton, 4,000 tons of lamb and just over 1,000 tons each of veal, pork, and box meat. The total amount cleared reached almost 55,000 tons as against 43,000 tons in 1913. This is an impressive amount but it fails to reach half that which was given as the estimate of the area's needs. It seems then that our warning against forming the impression that the Manchester markets served the whole area solidly was reasonably well founded.

The market figures also provide a useful though not perfect guide to the extent to which consumers chose between home and imported meat. It is useful in that such a large trade as is carried on in the market cannot, without special reason to the contrary, be deemed to omit seriously any one kind of meat demanded, but it is imperfect in that the general layout and development of the meat retailing trade where private killing is still carried on, lead it to over emphasise the imported meat trade and under emphasise the home trade. One

¹p. 117, Economic Series, Ministry of Agriculture and Fisheries, No. 19. 1921

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example may perhaps make the point clearer. A Bolton butcher killing his own beasts and, therefore, not needing the services of the market may all the same use the market by buying in it a certain amount of imported meat to supplement his supply. This being so, and no check being available to say to what extent it really is so the proportions between home and foreign meat as shown by the figures of the market must be taken as a general indication only.

They show that the balance between home killed and imported is roughly even. The recently published handbook to the Manchester Markets states that for the year ending March 31st, 1928 the tolls received on home-killed meat amounted to roughly 56 per cent. of the total and those on imported meat to 44 per cent. of the total. For the previous year the figures had been respectively 52 per cent. and 48 per cent. If, however, an analysis is made of the carcasses themselves, then it is seen that so far as beef, mutton and lamb are concerned the ratio of imported to total supplies is least in connection with beef, greatest in connection with lamb and the balance roughly even in the case of mutton. The whole position has been summarised for us in the following table.

An analysis of the carcasses sold in the Wholesale Meat Market during the year ending March 31st, 1928.

	Killed at the City Abattoirs	Killed elsewhere in the British Isles	Imported	Total
Beef	65,403	7,601	46,429	119,433
Mutton	331,665	14,364	340,251	686,280
Lamb	111,274	4,725	137,763	253,762
Veal	5,518	25,895	241	31,654
Pork	3,540	30,405	648	34,593
Meat in Boxes	—	4,321	52,270	56,591

Ratio of Imported to Total Supply.

Beef	39%
Mutton	49.5%
Lamb	54%
Veal	negligible
Pork	negligible
Meat in boxes	92%

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Fish

Of the wholesale markets dealing in perishable food products there remains only the Smithfield Fish Market. It was erected in 1872, covers an area of roughly 4,200 square yards, is purely wholesale and, like most of the other municipal markets, is a source of great pride to the corporation in that, to specify its particular claim, no stall has been vacant for the last ten years. Like the others, too, it must be called a key centre for the area, for retailers from surrounding towns have gradually built up the practice of paying early morning visits to the market and of relying on the market to provide them with fresh supplies for their own morning sales. Although no record is kept of the amount of fish actually handled, it has been stated in the official handbook to the markets that it clears roughly one thousand tons of fish per week. In the Ministry of Agriculture's report on Markets and Fairs there occurs, however, a passage to the effect that in 1923 the L.M.S. submitted figures to the corporation to show that in the year ending March 31st, 1923, the amount of fish carried to the market by the L.M.S. amounted to roughly 36,000 tons. Certainly a well organised and steady trade is carried on with all the important fish landing centres and equally certainly a considerable trade is done with the market by the more enterprising retailers of the adjacent towns. Trade is also carried on, particularly prominent at such times as Christmas, in game, poultry and rabbits, but of its extent no record is available.

With this, our study of the wholesale markets handling perishable food products is complete. The other two fish markets are retail and more local in their scope. They rely upon the bigger wholesale markets for a portion of their supplies. The Corn Exchange is, as the name implies, organised on rather a different basis and must be treated, therefore, in a section of its own—namely, that section which aims primarily at giving an account of the machinery of distribution and not one which, as this, aims rather at using such information as can be collected about the extent of the trade done in the different markets to throw light on the food requirements of the area they serve.

Throughout the whole of this section much has been made of the idea that the wholesale markets of Manchester are key centres. On that fact depends the justification of the aim just stated. Perhaps conviction will be lent to the plea if we give figures to show to what

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extent Manchester possesses that vital essential of the big market—cold storage facilities. It possesses them to perfection. Made up of a cold store near the meat market with a capacity of 3,700 tons and one near the Smithfield Markets with a capacity of 1,300 tons, they amount in the aggregate to no fewer than 5,000 tons. No other town on the industrial side of Lancashire even approaches that figure : it is sufficient to place Manchester third on a list of towns covering the whole of the country.

Further light is thrown on the nature of some of the requirements of the area, even though it may not illumine the question of their amount, by the various activities to which the development of an industrialised section has stimulated the rest of Lancashire. To many people Lancashire means a land noisy with the whir of machinery, bristling with chimneys, and Blackpool. They must be shown that it means also a corner of the lakes and, amongst other things, a population of fowls which has earned for it the name of “a regular poultry run.” Out of 39,491,374 fowls returned in 1926 as being on agricultural holdings of more than one acre in England and Wales no fewer than four-and-half millions belonged to Lancashire. It has the greatest density of fowl population of any county in the country. Next in order came Cheshire and not far behind that, the West Riding of Yorkshire—counties, it is pertinent to note, flanking it on the south and east respectively and allied economically to its industrial core. Important, too, are its activities in connection with certain vegetables, notably cabbages and potatoes, and milk. In the year 1927 its acreage devoted to the growing of cabbages for human consumption ranked a good third to Kent and Essex. Kent and Essex had respectively 3,604 and 2,923 acres under this crop and Lancashire had 2,458 acres. No less striking is the amount of land given up to potatoes—namely, 40,856 acres or about one-twelfth of the acreage devoted to potatoes in the whole of the country. As regards cows in milk it has slightly more than Cheshire—a specialist dairy county—their numbers being in 1927, 114,124 and 113,044 respectively.

These figures command respect. The county is clearly more than a mere agglomeration of factories. When its factoryed centre—roughly our area—holds up the mirror of its needs it finds reflected back to it numerous forms of intensive food production which, it may be justly claimed, are a clear index of its market importance.

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In a final paragraph we may now briefly take stock of the position we have developed for ourselves, and attempt a summary of its leading features. The methods adopted will be seen to be mainly two. First there is that of estimation based on questionnaire enquiries which, in a rough and general way, we have attempted to bring up-to-date, and second there is that of disclosing the amount of produce passing through the big wholesale markets of Manchester. Arbitrary in some respects though the first may be and sectional though the second may be in relation to the area as a whole, they yet seem to provide the main material available for a study of the area's requirements. They must be supplemented by the reader, however, with those sections of this survey which cover the C.W.S. and the machinery of distribution generally. For the rest it is for him, if he lives in the area, to note how far it squares with fact as he and his immediate circle know it. He will not if he knows anything of averages expect a perfect tally; but, let him inspect the foods that come on to his table and attempt to trace them back to their source of supply. Let him do that too for his town. Two things, we believe, will surprise him, first the variety of foods he and his family ordinarily and almost unthinkingly consume, and second the way in which the thread leads him in so many cases back to Manchester, and its Markets. He will not find that Manchester stands alone: other markets, particularly Liverpool, will show themselves, but it will appear in his list sufficiently frequently to convince him that it is essentially a key centre for his area. He will have conducted for himself a survey in little of Manchester as a market.

The writer wishes to express here his thanks to those, too numerous to mention one by one, connected with the markets of Manchester who have always shown themselves very ready to help with information, and chiefly to Mr. Austin Chadwick, General Superintendent of Markets whose help and kindness have been invaluable.

SECTION III.—MARKETS AND DISTRIBUTING ORGANISATIONS

An attempt is made in this section, by the use of tabular statement, to bring together the more important facts relating to the volume of trade in foodstuffs and the machinery of distribution in Manchester and district.

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TABLE I. Imports into the Port of Manchester compared with Total Imports into the United Kingdom.

Commodity	1923	1924	1925	1926	1927
Butter, cwts. ..	24903 <i>5095511</i>	22671 <i>5287244</i>	19810 <i>5853245</i>	27815 <i>5818840</i>	8163 <i>5818611</i>
Cheese, cwts. ..	85514 <i>2838546</i>	73666 <i>2887513</i>	91413 <i>3098702</i>	85408 <i>3014055</i>	56513 <i>2949082</i>
Eggs in shell, gt. 100's	339678 <i>20045943</i>	427293 <i>20279499</i>	362289 <i>21865116</i>	280133 <i>22125395</i>	355323 <i>24340350</i>
Fish, cwts. ..	5827 *	4091 *	10451 *	11239 <i>4805358</i>	10879 <i>4840903</i>
Raw Apples, cwts	480328 <i>6473397</i>	590661 <i>7232616</i>	381056 <i>5989674</i>	472628 <i>8842160</i>	281814 <i>6162267</i>
Raw Oranges, cwts.	733882 <i>7620271</i>	577433 <i>7519608</i>	679065 <i>7728601</i>	636797 <i>7973275</i>	535943 <i>7898374</i>
Lard, tons. . .	14811 <i>121780</i>	13866 <i>124450</i>	14661 <i>114205</i>	15333 <i>112710</i>	19732 <i>119852</i>
Margarine, cwts.	65290 <i>1238170</i>	74872 <i>1315344</i>	70464 <i>1386881</i>	73340 <i>1333454</i>	62400 <i>1185225</i>
Sugar, refined, cwts.	621334 <i>7721003</i>	838773 <i>11905074</i>	855499 <i>15252965</i>	355409 <i>13978982</i>	91628 <i>9374318</i>
Sugar, unrefined	—	—	—	—	—
Wheat, cwts. ..	23358063 <i>9807600</i>	23189723 <i>11031007</i>	27049014 <i>9167275</i>	21322560 <i>8015927</i>	23538368 <i>10124359</i>
Maize, cwts ..	1396100 <i>34480643</i>	1266076 <i>37667010</i>	867095 <i>27585433</i>	713721 <i>31783768</i>	1364028 <i>41927968</i>
Tea, lbs. . . .	23498645 <i>456513513</i>	32301000 <i>510498777</i>	26051135 <i>490566747</i>	31502902 <i>492215911</i>	36469967 <i>537001747</i>
Beef, cwts ..	38985 <i>11633834</i>	33791 <i>11485542</i>	47043 <i>11188513</i>	27895 <i>12066217</i>	48989 <i>12278252</i>
Mutton & Lamb, cwts.	15634 <i>5864766</i>	56111 <i>5097027</i>	31555 <i>5474352</i>	29738 <i>5368650</i>	14345 <i>5542559</i>
Bacon, cwts	35416 <i>7793150</i>	30987 <i>7873377</i>	28353 <i>7486164</i>	57774 <i>7471278</i>	47523 <i>8481968</i>
Hams, cwts. ..	34375 <i>1747091</i>	34978 <i>1636022</i>	21998 <i>1516748</i>	25643 <i>1195189</i>	34415 <i>888728</i>
Tobacco, unman- ufactured, lbs.	1191070 <i>173038418</i>	4779209 <i>182422745</i>	8510515 <i>188981026</i>	8449533 <i>197203625</i>	16136982 <i>222265323</i>
Animals : alive : for food, bulls, bullocks, cows, calves, No. . .	13461 <i>574395</i>	36255 <i>1010198</i>	39874 <i>800144</i>	30199 <i>708868</i>	19846 <i>636868</i>
Value, all imports £m.	56 <i>1096</i>	73 <i>1277</i>	72 <i>1321</i>	65 <i>1241</i>	60 <i>1218</i>

[U.K. imports given in italic figures.]
*Value only given for these years.

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TABLE 2. Imports into the Port of Manchester compared with imports into the Port of Liverpool.

Commodity	1923	1924	1925	1926	1927
Butter, cwts. ..	24903 <i>220332</i>	22671 <i>195013</i>	19810 <i>162062</i>	27815 <i>151135</i>	8163 <i>160397</i>
Cheese, cwts. ..	85514 <i>330460</i>	73666 <i>257853</i>	91413 <i>269084</i>	85408 <i>222713</i>	56513 <i>194548</i>
Eggs in shell great 100's ..	339678 <i>1662539</i>	427293 <i>1833181</i>	362289 <i>1745726</i>	280133 <i>1485141</i>	355323 <i>1401979</i>
Fish, cwts. ..	5827 <i>474237</i>	4091 <i>742677</i>	10451 <i>641405</i>	11239 <i>614938</i>	10879 <i>683308</i>
Raw Apples, cwts.	480328 <i>2031879</i>	590661 <i>2123666</i>	381056 <i>1890552</i>	472628 <i>2532695</i>	281814 <i>2018311</i>
Raw Oranges, cwts.	773882 <i>1777457</i>	577433 <i>1400985</i>	679065 <i>1666248</i>	636797 <i>1963667</i>	535943 <i>1995992</i>
Lard, tons. . .	14811 <i>46460</i>	13866 <i>49555</i>	14661 <i>43672</i>	15333 <i>40642</i>	19732 <i>37726</i>
Margarine, cwts.	65290 <i>61649</i>	74872 <i>88734</i>	70464 <i>109291</i>	73340 <i>105114</i>	62400 <i>83994</i>
Refined Sugar cwts.	621334 <i>459945</i>	838773 <i>590624</i>	855499 <i>948389</i>	355409 <i>766716</i>	91628 <i>278646</i>
Unrefined Sugar, cwts.	— <i>8342818</i>	— <i>8915862</i>	— <i>10103070</i>	— <i>9695034</i>	— <i>10609495</i>
Tea, lbs.	23498645 <i>2306494</i>	32301000 <i>4277670</i>	26051135 <i>4297304</i>	31502902 <i>3413215</i>	36469967 <i>3845507</i>
Wheat, cwts. ..	9807600 <i>22829400</i>	11031007 <i>23531680</i>	9167275 <i>20882211</i>	8015927 <i>20842256</i>	10124359 <i>23074440</i>
Maize, cwts. ..	1396100 <i>8174210</i>	1266076 <i>8382017</i>	867095 <i>5559606</i>	713721 <i>6650664</i>	1364028 <i>8812794</i>
Beef, cwts. ..	38985 <i>3923213</i>	33791 <i>2926565</i>	47043 <i>3360011</i>	27895 <i>3895930</i>	48989 <i>3283941</i>
Mutton & Lamb, cwts.	15634 <i>1328081</i>	56111 <i>916437</i>	31555 <i>1115642</i>	29738 <i>1150393</i>	14345 <i>1195752</i>
Bacon, cwts. ..	35416 <i>2091779</i>	30987 <i>1715069</i>	28353 <i>1641589</i>	57774 <i>1368252</i>	47523 <i>904759</i>
Hams, cwts. ..	34375 <i>1035949</i>	34978 <i>954097</i>	21998 <i>902380</i>	25643 <i>686109</i>	34415 <i>483844</i>
Tobacco, unman- ufactured, lbs.	1191070 <i>77807971</i>	4779209 <i>72015907</i>	8510515 <i>75614107</i>	8449533 <i>70733129</i>	16136982 <i>73598602</i>
Animals : alive : for food : bulls, bullocks, cows, calves, No. ..	13461 <i>118404</i>	36255 <i>259754</i>	39874 <i>198210</i>	30199 <i>198983</i>	19846 <i>195892</i>
Value, all imports £m.	56 <i>244</i>	73 <i>281</i>	72 <i>286</i>	65 <i>246</i>	60 <i>223</i>

Liverpool imports shown in italic figures.

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TABLE 3. Tonnage of Fruit imported to Manchester *via* the Manchester Ship Canal during the undermentioned periods.

	July, 1926 to June, 1927	July, 1927 to June, 1928
	Tons	Tons
ORANGES—		
Jaffa	7,389	6,274
Valencia, etc.	16,853	21,337
American	—	87
ONIONS—		
Egyptian	3,208	5,628
Valencia, etc.	20,188	6,539
Rotterdam	1,470	—
MANDARINS—		
Valencia, etc.	44	276
TOMATOES—		
Valencia, etc.	102	302
POMEGRANATES—		
Valencia, etc.	73	103
MELONS—		
Valencia, etc.	166	174
GRAPES—		
Valencia, etc.	312	207
LEMONS—		
Valencia, etc.	1,027	616
Egyptian	248	—
APPLES—		
Canadian	6,438	5,007
American	12,765	4,393
Pacific Coast	1,309	1,174
Australia	705	377
GRAPE FRUIT—		
American	19	48

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TABLE 4. A List of Markets in the Greater Manchester Area.

(Based on Appendix II. in "Markets and Fairs (Northern Counties)" No. 19 in the Economic Series of the Ministry of Agriculture and Fisheries).

Town	Market and area of market in sq. yards.	Further notes on the character of the market
Accrington	2485 c. 3976 u.	General retail produce, Tues., Fri., Sat. Fruit and veg.: daily.
Ashton-in-Makerfield	7437 u.	General retail produce: Sat.
Ashton-under-Lyne	Covered mar.. 4534 c. Uncovered market 7280 u.	Retail meat and fish: daily. General retail produce: Mon., Fri., Sat.
Atherton	1567 u.	General retail produce: Fri.
Bacup	1171 c. 2923 u.	General retail produce: Wed., Sat.
Blackburn	Cattle market 1121 c. 3430 u. Fish market 976 c. Fruit and veg. market 2585 u. Gen. market } Growers' market } 7443 u. Market Halls 2850 c. Meat market and abattoirs 7589 c. Fish market 596 c. (L.M.S.Rly.Co. 1298u. Fish market 498 c.	Auction and private sales, livestock: Mon., Wed., Alt. Tues. Wholesale and retail fish: daily. Mainly wholesale: daily. General retail produce: Wed., Sat. Fruit and vegetables: generally Tues., Fri. Mainly dry goods: retail: daily. Wholesale: daily.
Bolton	Fruit and veg. market 2040 c. 5154 u. Market Hall 7188 c. Cattle market 758 u.	Fish, poultry, game: daily. Wholesale and retail fish and poultry: daily. Wholesale and retail fruit and veg.: dairy produce and eggs: wholesale: daily. Retail: Tues., Thurs., Sat. Retail misc. goods: Tues., Thurs. Retail produce: daily. Auction sales, livestock: Wed. Hide and skin market: daily.
Brierfield.. ..	2000 u.	Retail produce: Fri.

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Town	Market and area of market in sq. yards.	Further notes on the character of the market
Burnley	2600 c. 5320 u.	General retail produce : Mon., Sat. Fruit and vegetables daily. Hide and skin market : daily.
Bury	Market Hall 2900 c. Open market 5340 u.	General retail produce : Meat : daily. General retail produce : Sat.
Cadishead	1256 u.	Retail fruit, veg., meat and misc. goods : Fri.
Chorley	General market 584 c. 75 u. Butter and egg market 225 c. Cattle market 108 c. 108 u	Retail fruit, veg., fish and poultry : Tues., Sat. Butter, cheese, eggs : Tues. Auction and private sales livestock : auction poultry : Tues.
Clitheroe.. .. .	General mark. 7830 u. Cattle market 1469 c. 1155 u.	General retail produce : Tues., Sat. Auction and private sales, livestock : Mon., Tues., Alt. Fri.
Colne	Market Hall 2000 c. Open market 6455 u. Cattle market	General retail produce : Wed., Fri., Sat. General retail produce : Wed. Auction and private sales, livestock, poultry : Fri., Sat.
Crompton	1500 u.	Retail produce : Thurs.
Darwen	Market Hall 1600 c. Open market 3000 u.	Retail produce : Mon., Fri. Fruit, veg., fish : Sat. Retail produce : Mon., Fri., Sat.
Denton	2100 u.	General retail produce : Fri.
Eccles	1895 u.	General retail produce : Sat. [There is also a general retail produce market on Fridays.]
Failsworth	2000 u.	Retail dairy produce, eggs, fruit and veg. : Thurs.
Farnworth	12070 u.	General retail produce : Mon., Sat.
Gt. Harwood	1250 u.	General retail produce : Fri.
Haslingden	— 1200 c. 1200 u.	General retail produce : uncovered : Tues., Sat. Livestock auction : Thurs.

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Town	Market and area of market in sq. yards.	Further notes on the character of the market
Heywood	1240 c. 2710 u.	General retail produce : Fri.
Hindley	3915 u.	General retail produce : Fri.
Horwich	900 c. 1665 u.	Retail produce : Mon., Fri.
Lees	2200 u.	Retail, general, bacon, fruit and veg. : Wed.
Leigh	2420 u.	General retail produce : Fri., Sat.
Littleborough.. ..	600 u.	General retail produce : Fri.
Little Lever	626 u.	Retail produce : Tues., Fri.
Longridge	900 c. 1500 u.	Livestock : Mon., month- ly during summer and Dec.
Middleton	1529 u.	General retail produce : Fri.
Milnrow	165 c.	Auction and private sales, livestock : Thurs.
Mossley	5,000 u.	Retail produce : Thurs.
Nelson	Market Hall 2180 c. Open market 1200 c. 1000 u.	General retail produce : Mon., Wed., Fri., Sat. Retail produce : Wed., Fri., Sat.
Newton-in-Maker- field	8000 u.	General retail produce : Fri.
Oldham	General mark. Hall 4042 c. Fish market Hall 355 c. Open market 14113 u.	General retail produce : daily. Retail fish and poultry : daily. General retail produce : Mon., Fri., Sat.
	Godwick market 9210 u. Hollinwood market 5659 u. Hide and skin market	General retail produce : Thurs. General retail produce : Thurs. Auction sales, hides and skins : Thurs.
Padiham	834 c. 723 u.	General retail produce : Fri.
Pendlebury	8055 u.	General retail produce : Fri.
Radcliffe	460 c. 1500 u.	General retail produce : Fri.
Ramsbottom	1500 u.	Retail produce : daily ; main day, Sat.
Rawtenstall	Central market 2512 c. 777 u. Waterfoot 688 c. Market 1090 u. Auction 1000 c. 1500 u. Saleyard 170 c. 80 u.	General retail produce : Thurs., Sat. General retail produce : Fri. Livestock : Mon., Tues. Private sales livestock : Mon., Sat.

MANCHESTER AS A MARKET

Town	Market and area of market in sq. yards.	Further notes on the character of the market	
Rochdale.. ..	Cattle market 2734 u.	Private sales, cattle Wed.	
	New market 4657 c. 1707 u.	General retail produce : wholesale fish : daily.	
Royton	720 c. 1190 u.	General retail produce : Thurs	
Salford	Cattle market 4840 c. 33880 u.	Private sales, cattle, sheep : Tues.	
	Gen. market 12100 u.	General retail produce : Mon., Sat.	
Stretford	2000 c.	General retail produce : Tues., Fri., Sat.	
Tyldesley	746 u.	General retail produce : Fri.	
Urmston	3000 u.	General retail produce : Tues., Fri.	
	684 c. 114 u.	General retail produce : Tues., Fri., Sat.	
Walkden	3000 u.	General retail produce : Fri.	
Warrington	Fish market 722 c.	Fish, chiefly retail ; also general retail produce : Wed., Sat.	
	Gen. market 5324 c.	General retail produce : Wed., Sat.	
	Meat market 766 c.	Retail Meat and farm produce : Wed., Sat.	
	Fruit and veg. market 320 c. 394 u.	Fruit and veg. : Wed., Sat.	
	Potato market 3432 u.	Potatoes and vegetables : Wed., Sat.	
	Auction 880 c. 327 u.	Livestock, corn, fodder, potatoes, poultry : Mon.	
	Auction 220 c. 60 u.	Livestock and poultry : Mon.	
	Corn market c. & u. 1538 c.	Corn : Wed. General retail produce : Thurs.	
	Wigan	Gen. market 3983 c.	General retail produce : daily.
		Farm Produce market 15364 u.	Fruit and veg., mainly wholesale : Tues. Friday : Corn.
Fish market 130 c.		Wholesale and retail fish : Tues. to Sat.	
Fish market 722 u. Auction 500 c. 200 u.		Retail fish : Tues. to Fri. Livestock : Mon.	

MANCHESTER AT WORK

TABLE 4a.
Number and Trades of Dealers in Manchester and Salford.

Trade	Approximate Number
Corn and Flour Merchants and Factors	32
Corn and Provender Dealers	44
Bakers and Flour Dealers	175
Provision Merchants	89
Produce Brokers, Importers and Merchants	57
Butter Factors, Importers and Merchants	17
Yeast Merchants and Dealers	14
Tea and Coffee Merchants and Dealers	61
Wholesale Grocers	40
Grocers and Tea Dealers	1409
Wholesale Confectioners	85
Retail Confectioners	1536
Pastrycooks	67
Shop-keepers, provision dealers and dealers in sundries	3842
Fruit Merchants	28
Potato Merchants and Salesmen	67
Fish and Game Salesmen	55
Fruiterers and Greengrocers	1508
Poulterers	28
Nurserymen, Seedsmen and Florists	163
Meat Salesmen	42
Butchers	788
Pork Butchers	91
Fishmongers	131
Fried Fish Dealers	920
Dairymen	417
Newsagents	622
Stationers	187
Tobacconists	586
Tailors	727
Outfitters	125
Ladies' Outfitters	119
Boot and Shoe makers and dealers	340
Wholesale Clothiers and Merchants	98
Ironmongers, Wholesale	12
Ironmongers, retail	102
Hardware and General Dealers	406
Coal Factors	10
Coal Agents	20
Coal Owners and Merchants	251
Coal Dealers	310

NOTE.—The classification adopted in this list is exactly the same as that of the trades directory. Some duplication, therefore, is bound to occur since some firms are recorded under two or sometimes more classifications. To what extent such duplication occurs it is impossible to say. It should be regarded, therefore, as essentially a list of the different selling services in the area and not as a list of individual businesses. A large firm that is, may be registered under Tea dealing and Merchanting and under Grocery. If that is so it will appear twice in the tabulation, and the justification for that is that two distinct services in the distributive system of the area have been supplied.

MANCHESTER AS A MARKET

(b) Distributive Occupations and their numbers in Manchester and Salford. As given in the Census Returns 1921.

	Manchester	Salford
Proprietors, Managing Directors of Wholesale or Retail businesses	13160	9426
Brokers, Agents and Factors, not mentioned in connection with other industries ..	1359	3574
Buyers	1047	162
Commercial Travellers	3216	584
Salesmen and Shop Assistants	16703	4202
Costermongers and Hawkers	1838	317
Total over 12 occupied	363952	114761

NOTE.—This table should be read in conjunction with those tables in this book which show the distribution of the people of the area among the different occupations.

(c) A short list of Trade Associations in the Manchester and Salford area mainly connected with food products.

Name of Association	Approximate membership
Manchester and District Wholesale Fruit Buyers' Association	100
Manchester Smithfield Market Tenants' and Traders' Association	150
Manchester and District Association of Retail Fruiterers, Florists and Fishmongers	200
Association of Fruit Brokers of Manchester	Three firms of fruit brokers at the Campfield Fruit Auction
Manchester members of the National Federation of Fruit and Potato Trades' Associations	144
Manchester Wholesale and Retail Fish Market Tenants' Association	100
Manchester, Salford and District Grocers' Association	200
Manchester Wholesale Provision Association	150
North of England Wholesale Grocers' Association (Manchester Committee)	44
Manchester Retail Trades' Association	170
Manchester Wholesale Clothiers' Association	40
National Association of Corn and Agricultural Merchants (Lancashire Area)	80
Manchester, Salford and District Corn Merchants' Association	66
Manchester Wholesale Meat Salesmen's Association	36
Manchester, Salford and District Butchers' and Meat Traders' Association	600
Manchester, Salford and District Master Bakers' Association	150
Manchester, Salford and District Amalgamated Union of Operative Bakers and Confectioners	1400
Manchester, Salford and District Milk Dealers' Association	220

MANCHESTER AT WORK

In addition we may note that :

- (1) The Grocery Section of the Corn Exchange has a membership of 450.
- (2) The Corn Section of the Corn Exchange has a membership of over 200.
- (3) The Coal Exchange has a membership of over 1,200
- (4) A Corn and Allied Trades Guild, with aims very reminiscent of the old-time guild has recently been formed, and now has a membership of about 100.
- (5) In Manchester and Salford there are 1914 registered milk dealers, made up of 1214 in Manchester and 700 in Salford ;

And finally that, so far as Manchester alone is concerned, the official handbook gives the following as the number of licensed houses :—

Public-houses, Hotels, Restaurants	461
Beer Houses : " On "	883
Beer houses : " Off "	688
Refreshment Houses and Wine Licences	4

The information in this last table has been kindly supplied by the secretaries of the various trade associations.

SECTION IV.—CO-OPERATION AND THE C.W.S.

BY PERCY REDFERN

Manchester, in its own limited area merely the fifth most populous British city, is frequently quoted as at the centre of a region whose millions equal in number those in and around London. That Manchester enjoys some capital dignity, and is not merely central like a man wedged in a crowd, is shown by its metropolitan standing in the British Co-operative Movement. The English C.W.S. is the oldest and largest of a score of similar national federations over the world (including the Scottish C.W.S., of Glasgow) and it bases on Manchester ; while the city is equally the headquarters of co-operative insurance, of the co-operative press and of the all-inclusive Co-operative Union of Great Britain and Ireland. Students from many countries come to the Manchester hostel of the Union—actually in Salford—to study co-operation at its historic centre.

Robert Owen, manager of a great Manchester factory while still a boy, refused to remain simply an employer ; and the new industrial populations were as little content to live merely as hands. Owen in due (or undue) time scattered social ideas ; and in that Manchester hinterland where industry makes contact with the independent spirit of the hills the Owenite ideas took a boldly democratic shape. But Rochdale, though so wonderfully successful a place of pioneer work, was not a natural centre. When the new retail co-operative societies felt the need of at least a provincial federation, the " North of England Co-operative Wholesale Agency and Depot Society Ltd." issued

MANCHESTER AS A MARKET

from a tiny conference hall in Ancoats, Manchester. Liverpool was considered as a place of business; and the use of a Liverpool co-operative office was borrowed for registration purposes; but the actual dealings also commenced in Manchester, in a single room at 3 Cooper Street. A few years, and, with the commendations of John Stuart Mill and *The Spectator*, the C.W.S. (shortening its name as its area and business extended) was opening the first of its present offices and warehouses in and around Balloon Street.

In other parts of the country, and especially in the English Midlands, the growing co-operative movement in some degree responded to the ideas of workshop self-government propagated by Tom Hughes, G. J. Holyoake, and E. V. Neale—Neale, the self-sacrificing London barrister and inheritor of Bisham Abbey, who, as honorary working secretary of the Co-operative Union, would leave his Thames-side home week by week for "lodgings as humble as those of many a Manchester clerk." Manchester, however, was different soil. Through the Wholesale Society the city became the stronghold of the rival federal or general consumers', large-scale, collectivist conception of co-operation, a conception equally as disinterestedly and devotedly served by the Rochdale co-operative apostle, Mitchell.

To-day the consumer's system presents both the advantages and disadvantages of success. An essentially idealistic way of business, in its prosperity it appears unromantic and prosaic, as it fills its considerable space in the mundane Manchester of everyday. There is no single society to touch the imagination by its numbers of owner-customer-members like the London Society (340,000 members), or with city premises like those of the great Birmingham and Liverpool societies. Eleven local consumers' associations in Manchester, Salford and suburbs provide these figures:—

Annual Trade (1928)	.. .. .	£7,899,600
Membership	.. .. .	213,700
Employees	.. .. .	5,800

Solid as these retail totals are, it is as a wholesale and headquarters centre that Manchester presents a success at any rate so obvious as to bring enquiry and recognition.

Nearly six million co-operators are affiliated through 1,265 societies in the Co-operative Union, whose modestly-placed centre is found in

MANCHESTER AT WORK

Manchester at Holyoake House. The C.W.S., lodged in its overshadowing piles along Corporation Street and Balloon Street, federates 1,123 societies with 4,454,793 individual members. These are chiefly consumers' organisations in the home territory of England and Wales ; but 101 members are agricultural and farmers' societies, and over 20 members are scattered overseas, from Calais to Shanghai and from Nova Scotia to Australia and the Argentine.

Manchester is at the head and front of the Co-operative Wholesale Society's mutual business, which as a single unit amounts to nearly ninety millions sterling yearly. Four times a year the society-members (there are no others) send seven hundred and more delegates to the Manchester general quarterly meeting, which follows the district meetings as the final voice in C.W.S. government. To Manchester every other week comes the complete board of thirty-two full-time directors—in future they are likely to be oftener at Balloon Street. Newcastle and London, Bristol and Cardiff include C.W.S. administrative centres and works. Here in Manchester are the main board-rooms and the chief meeting hall, the largest sale rooms, the main warehouses and the banking headquarters. Here, too, is the oldest productive works (Crumpsall, 1873); here on the Ship Canal, which the Society was foremost in supporting, is the largest C.W.S. flour mill and one of the largest in the country ; here, to the Pomona Docks (where a C.W.S. boat on New Year's Day, 1894, landed Manchester's first inward shipment) come the society's steamers ; here in the suburb of Longsight is the largest C.W.S. printing works ; here are located half-a-dozen other C.W.S. industries : garment-making for men and women, cabinet-making, building and shop-fitting, bacon-rolling, grocery-packing, glass-bottle making, box-making and motor building. And only a few miles out there are further mills and factories for soap and candle-making, starch manufacture, margarine-making, fruit-preserving, vinegar-making, and rope and twine manufacture. It is the society's policy to place its works wherever conditions are generally most favourable ; thus cotton-weaving is done at Bury and Radcliffe, and shoemaking for ladies in following the fashions has extended from Leicester to Norwich. Hence the fact of the number and variety of C.W.S. industries in and around Manchester does not speak simply of headquarters convenience. It is a witness to the city's industrial and commercial importance.

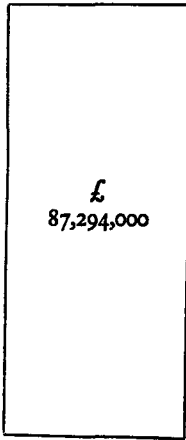
MANCHESTER AS A MARKET

The following tables show exactly how Manchester ranks in wholesale co-operative trade and manufacture :-

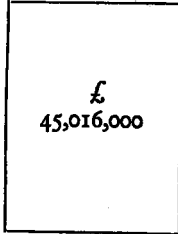
**CO-OPERATIVE WHOLESALE SOCIETY LIMITED
YEAR, 1928**

SALES :-

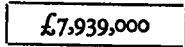
TOTAL :



In Manchester District
(District — Lan-
cashire, Yorkshire,
the Midlands, etc.
—for which Man-
chester is the Dis-
tributing Centre).

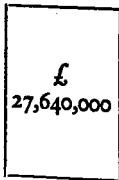


In Manchester "Area"
(Ten-mile radius
covering territory
of 71 societies).

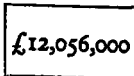


PRODUCTIONS :-

TOTAL



In Manchester "Area"
(Ten-mile radius).



Flour, Margarine,	£
Jams, Biscuits,	
Soap, Tobacco,	11,651,000
Printing, Clothing,	
etc.	
Textiles	405,000
	12,056,000

MANCHESTER AT WORK

BANKING :—

TOTAL TURNOVER	£690,520,000
MANCHESTER (HEAD OFFICE TURNOVER	£561,580,000

EMPLOYMENT :—

	<i>Males</i>	<i>Females</i>	<i>Total</i>
IN MANCHESTER (including Salford)	6,400	4,203	10,603
IN MANCHESTER "AREA" (10 mile radius)	8,663	6,617	15,280

Insurance cannot be classed with trade and manufacture, but since the Co-operative Insurance Society of Manchester is jointly owned by the English and Scottish Wholesale Societies perhaps one should mention its premium income, in 1928, of £4,184,162, and its 647 employees at the Manchester headquarters.

Centred thus on Manchester, it is possible that the co-operative movement misses something of the imaginative stimulus of the capital—incidentally, the modern fact of a private wire from Balloon Street to London indicates how London is growing in co-operative importance. On the other hand the movement is kept in touch with its provincial sources of strength, and with the solid social virtues usually conceded to the industrial North. Business must be business; but it can be coloured by social aims. To see great parties of excursionists at Balloon Street come to view their own, to witness the Christmas greetings given annually (and musically) in the Mitchell Memorial Hall to several hundreds of societies' business representatives, to mix with the fraternal bands of employee or member students of co-operation who every now and then are entertained in the big C.W.S. dining rooms—is to feel the reality of a democracy in business.

The C.W.S. does, in fact, link on Manchester trade with civic and social Manchester, and with all social England.



CHAPTER VII.

SOME MANCHESTER INSTITUTIONS



THE survey of the economic activities of Manchester and District, which it is the object of this volume to give, will have made it clear that the City of Manchester is something more than a collection of industrial and commercial establishments. As the capital of a densely populated province, it has social and political functions to serve, which makes it the home of institutions and societies embodying every form of social purpose and communal interest. A bare catalogue of the names of these would occupy more space than the limits of the present volume will allow; and readers must be referred for some account of these to other publications, which are not, like this volume, specifically limited to an industrial and commercial survey. Room must, however, be found for some mention of a few institutions, which are directly connected with the industry and commerce of the district, or have more than a merely local importance.

The City Corporation, in addition to performing the usual statutory functions of a local police, sanitary and highways authority, is responsible for the control of a system of educational provision, meeting every class of educational need, controls important libraries and art collections, and administers large industrial enterprises. Further reference is made to education, libraries and picture galleries below. Here the more important industrial undertakings are listed, to bring out the often forgotten fact, that the City Corporation is the largest industrial concern in the district.

Gas Supply

The oldest municipal trading undertaking is the Gas Works, which has been owned and operated by the local public authority since 1817. The undertaking is carried on at five works, and had an output of 7,556,300,000 cubic feet of gas in a recent year. It includes large

MANCHESTER AT WORK

chemical works for the manufacture of sulphuric acid and sulphate of ammonia, with the completion of the new works at Partington, down the Ship Canal, the capacity reaches 32,000,000 cubic feet per diem.

Water

The Water Supply, which has been under civic control since 1847, is of exceptional industrial importance, since an ample supply of pure soft water is an essential to the textile and other industries. It is drawn from a series of reservoirs in the Longendale Valley and from Thirlmere through an aqueduct 96 miles long; an additional supply is now being secured by raising the level of Haweswater. Water is supplied in bulk to the Corporations of Salford, Stockport and Hyde, the North Cheshire Water Company, and several urban district councils—in all to a population of a million and a half. The capital expenditure (1928) amounts to eleven millions.

The *tramway system* is one of the most extensive in the Kingdom. The length of single track is 290 miles. Recently the tram services have been supplemented by omnibus services, some of which act as feeders to the tram terminuses, others supply an express service (in some cases in co-operation with outside companies) into the centre of the city. The capital outlay embodied in this system amounts to £4,105,000.

Electricity has been supplied by the city since 1893. In addition to three older generating stations, the city and district have since 1923 been able to draw on the great Power Station at Barton, on the Ship Canal. This station has been selected under the Central Electricity Board's scheme for North-West England as a principal generating station. The undertaking has a present capacity of 250,000 K.W. The capital invested to 1928 was £9,944,355.

Public Health

No more than a mere mention is possible of the seventy-nine parks and recreation grounds owned by the city; the bathing establishments, including thirty-two swimming baths, and fourteen wash-houses; the fever hospitals and tuberculosis sanatoriums; the schools for mothers and infant welfare centres. The best indication of the efficacy of the city's public health work is the reduction in the city's death-rate

SOME MANCHESTER INSTITUTIONS

from 20·1 in the first quinquennium of the century to 13·9 in the years, 1921-1925, and the infantile mortality rate from 173 to 95).

Housing

An outgrowth of public health, which has been of great economic importance since the war, is the provision of housing. Under the Housing Acts, 1919 to 1925, some 1,457 acres have been acquired for municipal housing schemes; 14,256 houses have been authorised; and, up to November 30th, 1928, 11,622 actually built. Much remains still to be done, since there is much overcrowding still, and the clearing of unsatisfactory houses and areas cannot be undertaken until alternative accommodation is available.

Education

The public health service and the public service of education become more and more difficult to disentangle. Modern elementary schools have many of the good points of a sanatorium; they are in one storey; they have air and spaciousness. Five to ten acres of land are aimed at as a minimum provision. Asphalt is discouraged, trees and fields are cultivated.

A continuous and homogeneous cultural idea runs through the educational institutions of Manchester, beginning with the 54 Nursery classes, for children under the age of 5, and leading on, in considered and related steps, to the university. The reader is referred to the accompanying diagram which illustrates these steps in the educational pilgrims' progress.

Here are some figures concerning schools.

Type of School	No. of School Depts.	No. of Scholars
Elementary	390	113,910
Special	11	1,051
Central	20	6,254
Municipal Secondary	6	3,197
Aided Secondary	9	4,330
Junior Technical	5	600
Commercial		
Art		
Trade Schools	7	2,000
Day Continuation Schools		
Evening Schools	68	19,152

MANCHESTER AT WORK

The 113,910 elementary school places are made up as follows—Municipal, 66,002; Church of England, 26,027; Roman Catholic, 20,427; undenominational and Jews, 1,454.

The above schools and institutions are designed to meet the requirements of scholars up to 18 years of age : in addition, the City Education Committee provide facilities for the higher forms of study and research at the College of Technology, the High School of Commerce and the School of Art.

The passage from the elementary to the secondary and central schools takes place when the scholar is between eleven and thirteen years of age. Each year all of the children between eleven and thirteen in the committee's schools are brought under review, and such scholars as have reached Standard V. or a higher standard may compete in the committee's entrance examination. In 1928, 904 boys and girls won their way by this examination into municipal secondary schools and 2,106 into municipal central schools, making a total of 3,070 scholars who entered under agreement with the parents upon a course up to 16 years of age. In addition, 213 elementary school children were admitted to non-municipally controlled secondary schools. At 14 years of age, there are opportunities for scholars who do not, between eleven and thirteen years of age, gain a place in either a secondary or a central school, to take a two-year course at a junior technical school in preparation for entry to industry at 16 years of age, or at a junior commercial school in preparation for clerical posts, or at a junior school of art in preparation for posts in the arts and crafts, or at the day trade school in preparation for millinery or ladies' tailoring or dress making. When these courses are completed, scholars may continue their studies in the higher institutions indicated on diagram A. Up to 16 years of age all higher education controlled by the Manchester Education Committee is free to scholars who gain admission by examination. In addition, the committee have adopted a system of granting maintenance allowances to the parents of scholars who would not, without financial assistance, be able to remain at school. During the financial year, 1928-1929, the committee authorised the expenditure in scholarships and maintenance allowances of £28,500.

The programme of educational development, beginning April, 1924, had reached by December, 1928, the following point.

SOME MANCHESTER INSTITUTIONS

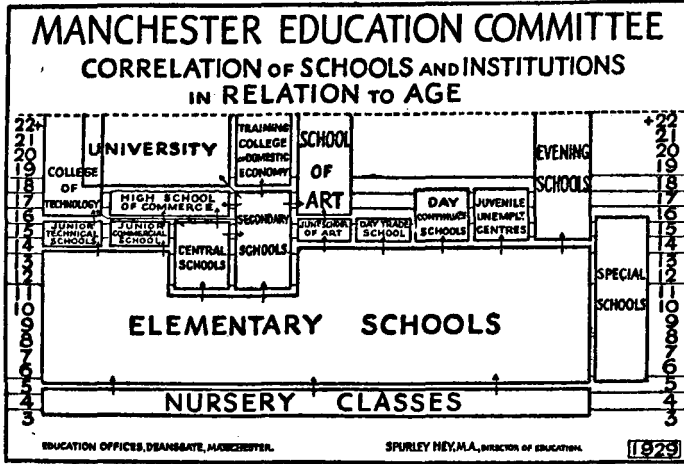


Diagram A

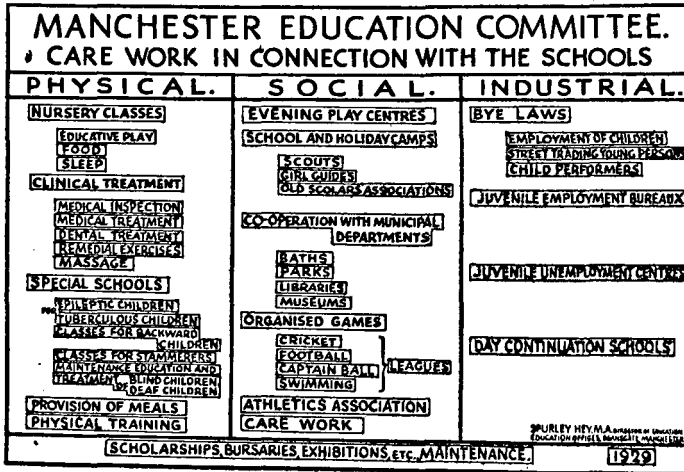


Diagram B

MANCHESTER AT WORK

	No. of schemes	Estimated No. of additional school places	Estimated cost
Completed	29	8,321	405,559
In progress	17	5,021	373,083
In contemplation	32	11,408	1,173,000
Cost of land	—	—	100,000
	78	24,750	£2,051,642

The 29 completed schemes include 5 new elementary schools, the establishment of 10 central schools by adapting existing premises, and the provision of 4 new secondary schools. The 17 schemes in progress include the provision of 5 new secondary schools, 1 central school, 2 special schools, 1 secondary school. The schemes in contemplation include 8 new elementary schools, 5 new special schools, 2 new nursery schools, 3 new secondary schools and 3 new technical schools.

The city's programme of education development will be affected by a scheme of "re-organisation" which contemplates the removal of children at 11 years of age to a separate department, and in the next few years great developments will be seen in this direction.

This is not even a sketch, much less an exposition, of the city's educational work, but the figures given above and diagram B (both provided by the courtesy of the Director of Education), may help the reader to an appreciation of the manifold ramifications necessary in a city which caters for the normal child, for the physically and mentally sub-normal child, and for the child whose original mental endowment carefully cultivated through the elementary and secondary school stages, marks him out as suitable for all that can be given in the higher forms of study and research.

Reference has been made to the *College of Technology*. This institution, unique in this county, combines two separate functions. It provides technical instruction, largely by means of evening classes, to thousands of craftsmen and apprentices in every branch of technology; at the same time, it offers the highest possible education in the technical applications of science needed by the more limited number of future organisers, directors, and research workers in industry. In its latter capacity it is associated with the University of Manchester,

SOME MANCHESTER INSTITUTIONS

constituting the Faculty of Technology in the university, and preparing for the degree of B.Sc.(Tech.). The scope of the college—shortly to be increased by a large extension of buildings—is indicated by the following figures :

No. of staff (full time), 95 ; (part time), 311			
No. of degree students	250		
No. of other day students	533		
No. of evening students.. .. .	5,616		
Total	6,399		

University

The University may be said to date from 1851, when Owen's College was opened in Richard Cobden's old house in Quay Street. Its founder, John Owens, left his fortune to found a college to provide instructions in "such branches of learning and science as are or may be taught in English Universities," subject to the condition that no religious tests should be imposed, or religious teaching given that was "reasonably offensive to the conscience of any student." In 1872 the old-established School of Medicine was incorporated, and the next year the college removed to its present site in Oxford Road, in which it was possible to provide laboratories for the study of natural science on a scale hitherto unknown in this county. The Victoria University was established by charter in 1880, with Owens as its first college; University College, Liverpool, and the Yorkshire College, Leeds, being added in 1884 and 1887. In 1903 this federal university gave place to the present universities of Manchester, Liverpool, and Sheffield.

The establishment of a separate university was quickly justified. Growth is indicated by the increase of the professorship from 35 to 46, the number of students from 1,000 to 2,500, the annual corporate income from £40,000 to £215,000; and even more obvious by the great extension of buildings. The university's faculties for practical and clinical work are not, however, confined to the Oxford Road site. Mention has been made of the special relation with the Municipal College of Technology. The Medical School works in intimate co-operation with the Royal Infirmary close at hand. Similar co-operation is maintained by the Faculty of Theology with the various independent theological colleges of the city; by the Faculty of Music with the

MANCHESTER AT WORK

Royal Manchester College of Music ; the Faculty of Law has close relations with the legal profession in the city ; Social Studies are aided by the existence of a vigorous University Settlement in Ancoats. The distribution of the work of the university is, however, best indicated by the number of students in the different Faculties in the last academic session :

	Under-graduate	Special Course	Post-graduate and other research
Arts	551	61	34
Science	337	31	69
Medicine.. ..	513	9	41
Commerce	182	18	7
Law	52	79	2
Technology	185	24	17
Education	122	—	16
Music	5	—	—
Theology.. ..	—	11	18
Total Students, 1927-1928 :			
	Males	Females	Total
	1,808	673	2,481

Students are drawn not only from Manchester and District, but from all over the United Kingdom and other parts of the Empire. The facilities for research draw students also from America and the Continent, and the importance of the researches carried out render Manchester University an institution not merely of local, or even regional significance, but of world-wide service and reputation.

The university houses and administers the *Manchester Museum*, which, among other treasures, has one of the finest collections of Egyptian antiquities in the country.

The Grammar Schools

The school which claims the Lord Chief Justice and the Economic Adviser to His Majesty's Government among its *alumni* is of more than local importance. Founded in 1515 it was converted into a modern school by Dr. F. W. Walker sixty years ago. Its record of academic success since then is unsurpassed by any other school in the country.

SOME MANCHESTER INSTITUTIONS

At the present time new buildings in Fallowfield are under construction, in which the school, reduced somewhat in numbers, will continue its work under pleasanter conditions than its present site in the centre of the city affords.

South Manchester is served by another day school on public school lines in the *Hulme Grammar School*, founded in 1881 ; while the *Girls' High School*, established in 1874, takes a place among girls' schools analogous to that taken by the two Grammar Schools among boys' schools.

Libraries

Manchester is rich in libraries. The Libraries' Committee of the City Council, in addition to providing twenty-four branch libraries in all the suburbs, has a collection of quarter-of-a-million volumes in the Central Reference Library, which is particularly rich in Lancashire and Cheshire history and topography. There are also special libraries of music, books for the blind, and bibliography : and a Commercial Reference Library in the buildings of the Royal Exchange. The *Chetham Library* occupies part of the fifteenth century buildings of the college of the parish church, and is the oldest free library in the county ; it is rich in topographical and theological works. The city's greatest treasures are, however, in the *John Ryland's Library*, opened in 1899 and housed in a beautiful modern Gothic building designed by Basil Champneys. Its collections include the Althorp Library, regarded as the finest private library in Europe, the Crawford manuscripts, upwards of 3,000 volumes printed before 1500, a large collection of original editions of English classics. At the same time the Governors have made it an excellent working library for students, whether in the Departments of theology, philosophy, history, palaeography, philology, belles lettres, bibliography, or the fine arts.

Art Galleries

The chief collection of pictures in Manchester is in the City Art Gallery in Mosley Street, a building designed by Sir Charles Barry. There is not, however, space here for the exhibition of a half of the city's possessions, which are moreover, continually being added to, and plans have been approved for a new Art Galley on the Piccadilly site. Meanwhile, the Egerton collection of oriental arms and armour is exhibited in Heaton Hall (a characteristic example of Wyatt's architectural genius), the Rutherston collection of modern art in another

MANCHESTER AT WORK

beautiful eighteenth century building owned by the city, Platt Hall, and other collections in Queen's Park and smaller galleries. Manchester is particularly rich in paintings of the English School of the last century, and in English water-colours. Both the City collection and the independent *Whitworth Institute* include a large number of characteristic examples of the latter.

Hospitals

Perhaps the most important of the social and philanthropic institutions of Manchester are the voluntary hospitals. These give Manchester a special regional importance because the distinguished specialists both in medicine and surgery whose services they enjoy attract patients from an area spread over many counties. Most of these patients are very poor, and, therefore, to Manchester is left the dual task of providing the medical skill and paying for the housing and nursing of the patients. The accounts and statistics of the Manchester Local Voluntary Hospitals Committee for 1927, the latest year for which complete figures are available, show that the total ordinary income of the seventeen institutions was £275,200, and the total ordinary expenditure £308,522—a deficiency of £33,322. The total accumulated deficiencies at the end of 1927 were £136,828. There were 2,164 beds available, and 1,868 of these, on an average, were occupied.

These are some of the year's salient figures :

	Number	Cost of maintenance	Average payment per patient	To be raised voluntarily
In-patients ..	31,944	£245,854	£1 3 8	£6 10 5
Out-patient attendances..	1,051,474	£57,952	1 8½	5 4½

In addition to the new Royal Infirmary in Oxford Road and the Salford Royal Hospital, there is a general hospital in Ancoats, a Jewish Hospital in Cheetham Hill, and specialised hospitals for women and children (St. Mary's and the Northern), for children, for babies, the Royal Eye Hospital, the Manchester Ear Hospital and St. John's Ear Hospital, the hospital for Diseases of the Skin, the Lock Hospital, and hospitals for consumption, cancer, and incurables.

SOME MANCHESTER INSTITUTIONS

Theatres

The culture of the art of the theatre in Manchester is not so vigorous as it used to be. It is not without significance that the Gaiety Theatre, whose contribution to drama was distinguished and considerable, is now a cinema. So, too, is the Theatre Royal, where Irving and Ellen Terry trod the stage. We have positive, though hardly heroic, gains to place against these losses. There is the Rusholme Theatre, a place which is keeping alive the repertory tradition ; and there is an unusually widespread amateur interest in the drama. The Unnamed Society, in particular, is moving along a bold road of experiment both in its conception of what constitutes drama and in the decoration which gives the plays a personality upon the stage. There are eleven major theatres and music halls in Manchester, besides a number of smaller houses. More than half of these are so keenly aware of the competition of the cinema that they themselves are licensed to show pictures ; and, including these, there are no fewer than a hundred " picture houses " in the city.

Music has always meant much to the people of Manchester. In the nineteenth century it meant courtly occasions in the " Gentlemen's Concert Hall," and splendid but isolated happenings like the coming of Mendelssohn to conduct the first public performance of his "Elijah." But music became indigenious, not exotic, when Hallé came to live in Manchester. The Hallé Orchestra, under the conductorship of Sir Hamilton Harty, maintains the prestige that Hallé gave it ; and it represents but the hub and centre from which musical occasions radiate into all sorts of the city's times and places. There are mid-day concerts fitted in between the work of the morning and afternoon ; the Hallé and Brand Lane Concerts bring all the leading artistes of the world to Manchester ; the municipality itself is responsible for concerts, and there is more than one series of quartet concerts every year ; the Royal Manchester College of Music, which had for many years Brodsky as its head, meets the need of an exacting public for the highest education in music.

Press

The city's importance as the best centre of distribution for the North of England is shown by the number of London daily newspapers which publish here. Of the four which appear simultaneously in London

MANCHESTER AT WORK

and the North of England, three publish in Manchester. Besides these, there are published in the city a great many other newspapers which have no particular local attachments but have chosen Manchester because it lies so conveniently at the heart of a vast population. Eight widely-known newspapers are published daily in the city, and weekly there are published fifty-one newspapers and periodicals, ranging from journals of international reputation to the crude consolations of the simple-minded.

Chamber of Commerce

There remain for mention two institutions of peculiar importance to industry and trade—the Chamber of Commerce and the Royal Exchange. The Manchester Chamber of Commerce, although it takes its designation from the city, is representative of the commercial interest of a much wider area. Over a hundred years old in its present form, and with a membership of nearly 3,000 firms, it is perhaps the most authentic representation of the views of the industrial North, and as such has frequently taken the lead in the formation of commercial public opinion. The scope is indicated by the following list of standing committees :

Executive Committee
General Purposes Committee
Trade and Merchandise Marks
(Statutory) Committee
Education Committee
Arbitration Advisory Committee
Transport Committee

Shipping Merchants' Committee
Commercial Law Committee
Late Delivery Certificate Advisory
Committee
Postal, Telegraph and Telephone Ad-
visory Committee
Educational Scholarships Advisory
Committee

and the sections, into which it is divided for the purpose of representing more accurately the trades of its members :

Chemical and Allied Trades
Yarn
Home and Overseas Dominions
Africa
Produce
Testing House
Engineering and Metals
Sugar
India

China and Far East
Europe and United States
Central and South America
Egypt, Greece and Levant
Grey Cloth
Leather
Printing and Bookbinding
Finishing and Allied Trades

SOME MANCHESTER INSTITUTIONS

The Chamber publishes a *Monthly Record*, issues certificates of origin for customs purposes, and has developed an important service of arbitration of which members avail themselves more and more extensively. Two important associated undertakings are the Chamber of Commerce Testing House, with offices in the Royal Exchange, used mainly for textile tests, but also for testing chemicals, food-stuffs, soaps, oil, coal, metals and drugs; and the Cotton Trades Statistical Bureau, established in 1927, with the support of all sections of the industry.

Royal Exchange

There has been an Exchange in Manchester since 1729. Its growth to the dimensions of the present Royal Exchange has taken place *pari passu* with the growth of modern industry. The present Exchange is the focus of Lancashire and the adjoining counties' economic activities. It has a membership of 10,000 drawn from places as far apart as London and Glasgow. The "floor" covers the whole site (8,222 square yards) on one level, with the exception of walls and staircases; the attendance at High 'Change is estimated to reach 7,000 persons. The members of the floor are chiefly cotton brokers, spinners, yarn agents, manufacturers and merchants and their representatives, engaged in dealing in raw cotton, yarn and cloth. Many subsidiary industries are, however, represented—the chemical and colour industries, engineering in its many branches, other textiles than cotton, insurance, transport and shipping. The Royal Exchange typifies the industrial district of which it is the centre, not only in the scale of its transactions and the variety of its interests, but in the extraordinary facility for personal negotiation and settlement of business that it affords. If, as is said, it is the largest exchange in the world, that is only natural in the centre of the most compact and important industrial district in the world.

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