Some aspects of the geography of the ports of Sunderland, Seaham, and the Hartlepools

Donald A. Burgess

SOME ASPECTS OF THE GEOGRAPHY OF THE PORTS OF SUNDERLAND, SEAHAM, AND THE HARTLEPOOLS.

A GEOGRAPHICAL THESIS
PRESENTED BY
DONALD A. BURGESS
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INTRODUCTION.

Sunderland, Seaham and the Hartlepools are situated on the coast of County Durham.(See Fig.I.) All three are ports, mainly of local importance, which share a common hinterland - the East Durham Coalfield. Their modern growth and prosperity are connected to a very remarkable extent with this coalfield, as the following chapters will demonstrate.

Although the Hartlepools now form a single continuous built-up area, they are in fact, two distinct administrative entities; the older Borough of Hartlepool, and the relatively recent County Borough of West Hartlepool. Several attempts to amalgamate the two have failed, mainly because the older Borough is still very jealous of its long tradition of independence. Sunderland is a County Borough, the largest in County Durham, and Seaham is an Urban District.

After describing the Physical, Human and Economic background to the area as a whole, this thesis attempts, in the case of each port, to examine site, form, growth and function. By means of this systematic approach, the ports

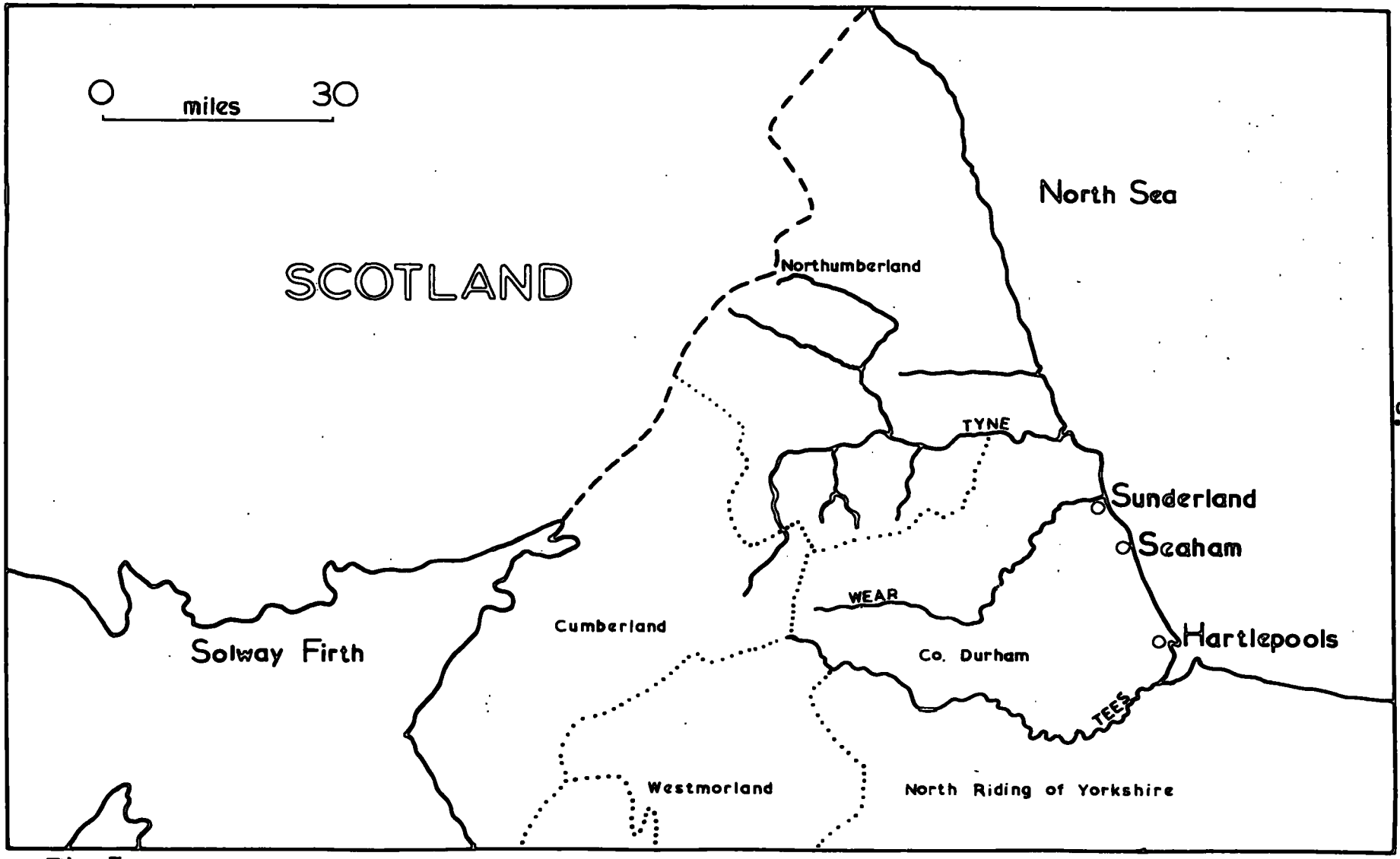

Fig.I.
Map showing the location of Sunderland, Seaham and the Hartlepools within the area

may easily be compared and an assessment made as to their relative importance, both in the past and at the present time.

In view of the paucity of published material devoted primarily to the ecomomic functions of these ports it has been felt right to dwell at some length on aspects such as Industry and Trade, especially during the period since the Ist World War. By so doing, it should be possible to form some conclusions as to the effects of the economic depressions which so severely afflicted this area during the earlier part of the present century. The way in which these ports have developed and responded to conditions at the present time will be discussed and their future prospects assessed.

PART ONE

THE PHYSICAL BACKGROUND

The Magnesian Limestone of East Durham is often considered to be the type-area of the Permian formation in Britain. As can be seen from the map(Fig.2), it forms a rough triangle with its apex near South Shields and its base on a line from Pierce Bridge to Hartlepool. It rises steeply from the sea to form a drift covered plateau at 400 to 500 feet above sea level. (See Figs.3 and 4) Its inland, western margin makes a pronounced escarpment overlooking the Wear valley, broken only by the post-glacial cut of the Wear above Sunderland, and the great overflow channel from the glacial 'Wear Lake' at Ferryhill. South of Ferryhill, the height of the Permian country declines rapidly and merges into the deeply drift-covered Trias area of the Tees lowland.

The Magnesian Limestone is not, however, a simple and homogeneous formation; it is inconstant both in the sequence of its beds and in their chemical composition. The series begins with the Yellow Sands, a discontinuous, incoherent, false-bedded sand, possibly of aeolian origin. This reaches a maximum thickness of 180 feet, and can be seen

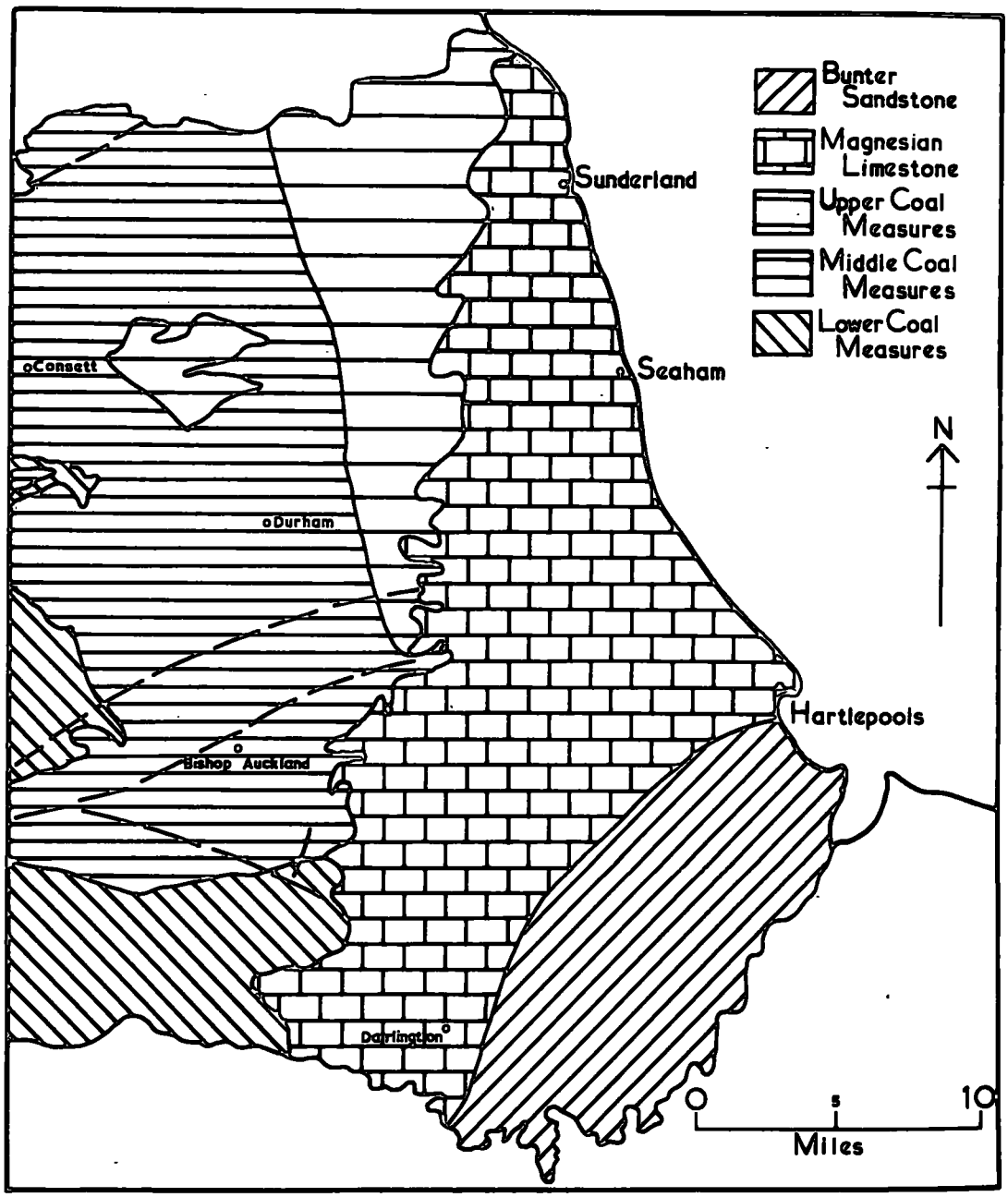

Fig. 2. The Geology of East Durham.

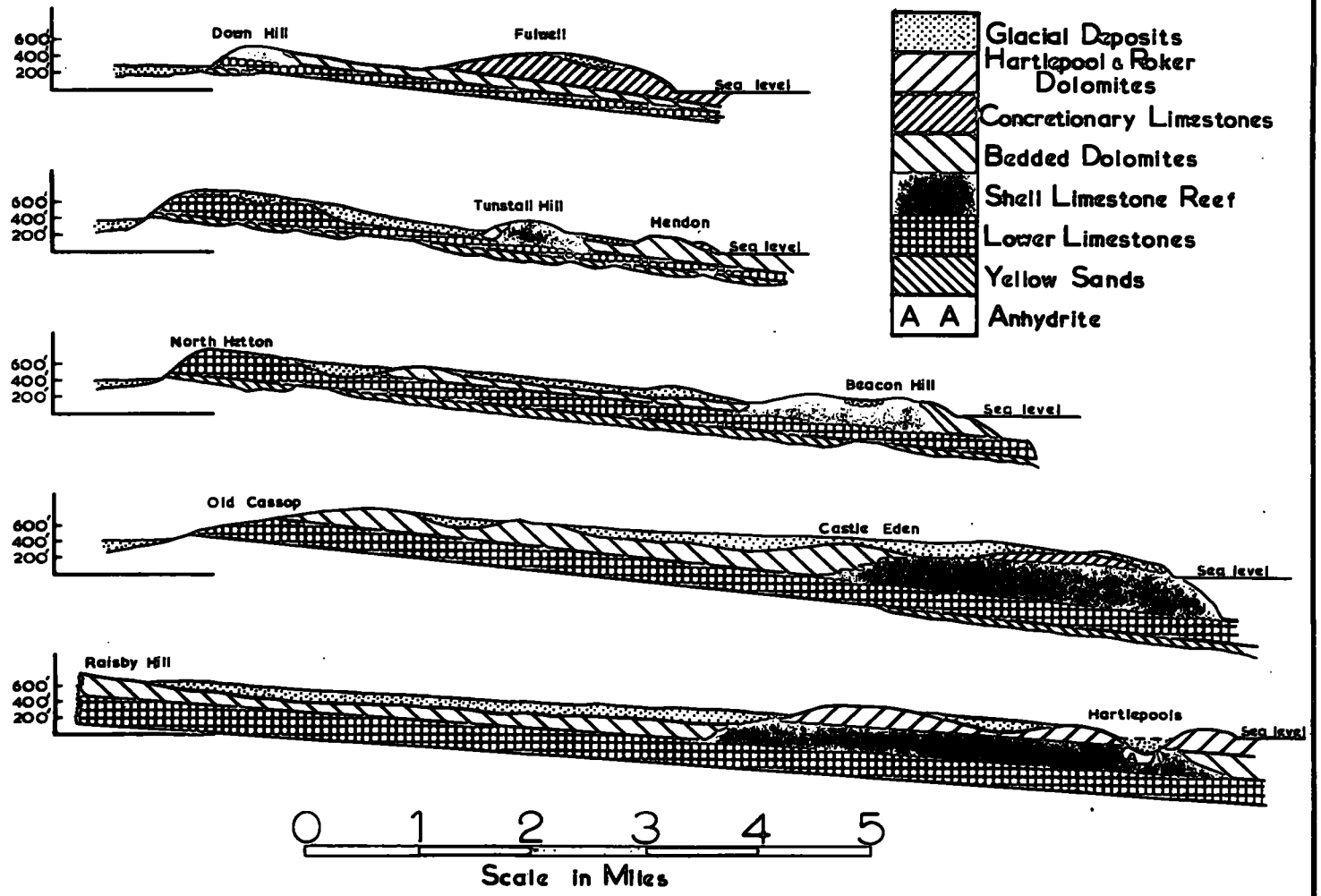

Fig. 3. Sections across the Permian formation in Durham from the western escarpment to the sea coast.(after C.T.Trechmann)

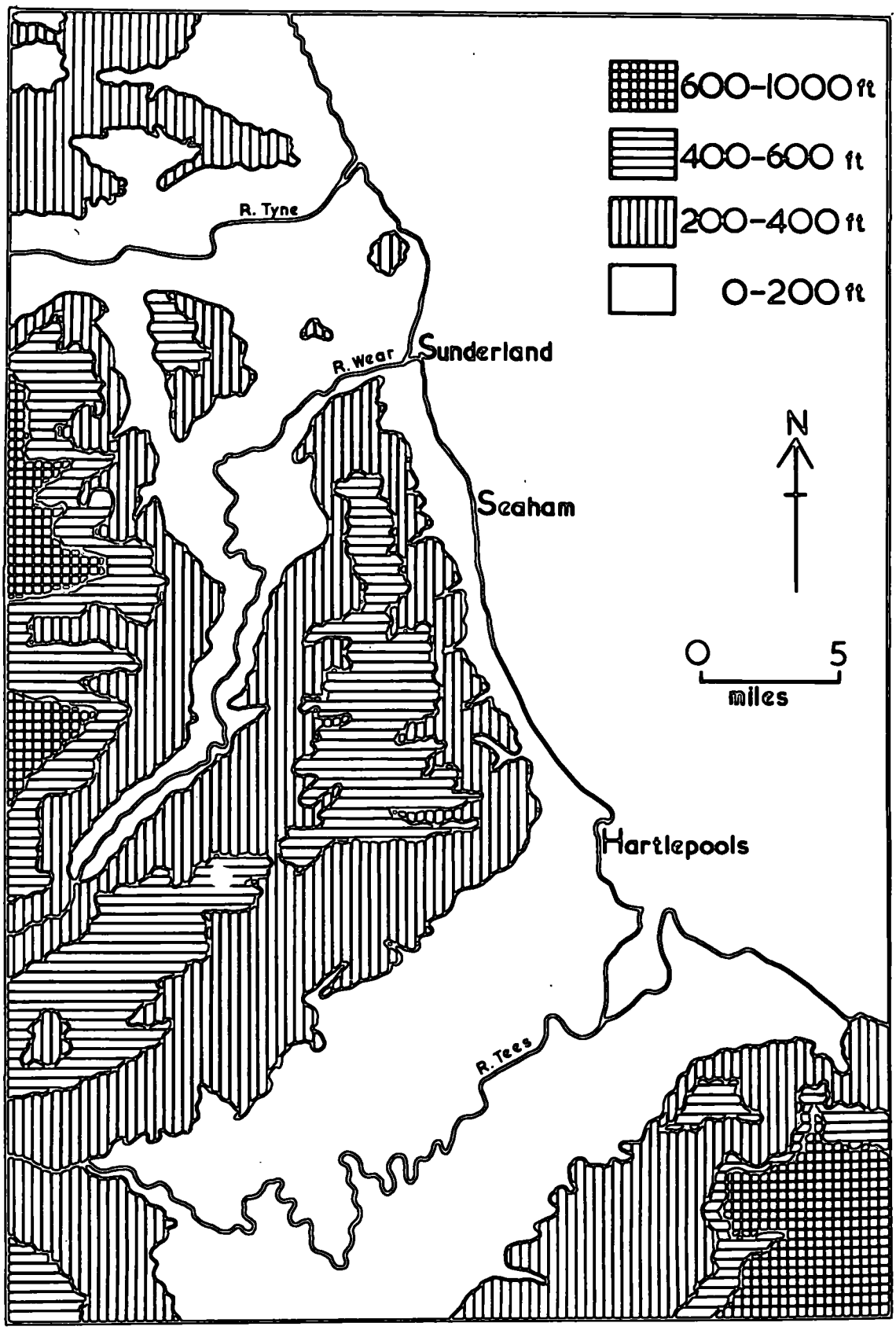

Fig. 4. Map showing the relief of East Durham.

on the coast only in the small outliers just north of the Tyne, at Tynemouth and Cullercoats. These sands are succeeded by 15 feet of Marl Slate containing galena and zinc blende, above which is the main mass of the Magnesian Limestone, divided by C.T. Trechmann[1] into Lower, Middle, and Upper divisions, the total thickness of which is about 800 feet. The Lower Limestone is a blue-grey, evenly-bedded rock. The Middle or Shell Limestone is particularly interesting on account of the nature of the brecciation which is of three types; - 'cellular', 'massive', and 'gash'. The Upper Limestone includes the spheroidal or 'cannon-ball' concretions, and overlying these are the Hartlepool and Roker Dolomites, about 100 feet thick, massive, and oolitic. The way in which these several formations of the Permian approach the coast is clear from the five sections shown in Fig.3.

The Magnesian Limestone is not wholly composed of the mineral dolomite, but is a variable mixture of dolomite and calcite, and near the top of the formation are beds of salt and anhydrite. These later two minerals form the basis of a great chemical industry in the Stockton and Middlesbrough

area, the anhydrite being extensively worked as a raw material used in the production of sulphur and cement. The various beds of the Permian are well exposed both along the coast and in numerous quarries where the limestones are extracted for use as a flux in the iron and steel industry and for agricultural purposes.

Much of the Magnesian Limestone area is covered by thick deposits of glacial drift, the majority of which are composed of boulder clay interspersed with occasional patches of gravel and sand. Except along the scarp-face and the coastal cliffs, limestone rarely outcrops through this mantling of drift. In the eastern part of the Durham Plateau the drift cover is frequently breached by deep, narrow valleys or 'denes', all of which are post-glacial in date. Excellent examples of these steep-sided, wooded, gorge-like valleys occur at Hendon, Ryhope, Seaham, Hawthorn, Castle Eden and Crimden. These are nearly all cut through boulder clay, but in one or two cases they also cut through the underlying Magnesian Limestone rocks.

At Crimden Dene, where a low cliff of boulder clay is capped by blown sand, there is an abrupt change in the

nature of the coast. To the north lies an austere and rocky section with high cliffs often weathered into arches, caves, pinnacles and stacks, and, unfortunately from the scenic point of view, despoiled by the presence of several large collieries with their attendant waste tips. To the south is a long stretch of sands backed by a belt of dunes and occasional low cliffs, but with no collieries.

Near Hartlepool the nature of the coast again alters. Hartlepool itself is situated on the Heugh, an outlying mass of Magnesian Limestone which has been joined to the mainland by a spit of sand and dunes running from Crimden Dene. It is an excellent example of a Tombolo formation. (See Fig.20) South of Hartlepool the coast is formed of low cliffs of sandstone of Triassic age, but these soon give way to the extensive marshy area of Tees Bay.

Although the Permian is the most widespread outcrop in East Durham the most important formation from the economic point of view are the underlying Coal Measures. The Upper Coal Measures are concealed unconformably beneath the Permian and are estimated to extend eastwards under the sea for a minimum distance of at least three miles along nearly

the whole coastwise length of the coalfield in County Durham. The coal from these measures provides the backbone of the economy of East Durham, and its development has vitally affected the growth and prosperity of the ports of Sunderland, Seaham, and the Hartlepools.

Coastal Erosion.

Coastal erosion is severe along much of the Durham coast. A comparison of the line of the cliff face shown on the 1919 Ordnance Survey map with a line established by survey in 1949 shows that the cliffs immediately to the north of Seaham Harbour have receded during the past 30 years by varying amounts up to 70 feet. The cliffs here are about 50 feet high and are composed of Magnesian Limestone capped by Boulder Clay of varying thickness. The Limestone is mainly soft and friable with veins of hard material and offers less resistance to erosion by the sea than one would expect from the rugged appearance of the cliffs. The softer material in the exposed face of the cliff is scoured by the waves and undercut until the overhanging rock falls on to the beach; this in turn disturbs the Boulder Clay overburden, and slides occur until the clay once more assumes a stable slope.

The rate of erosion, however, is by no means uniform. Professor Steers[2] suggests that the sites of Mesolithic and Neolithic settlements afford some evidence as to the amount of erosion that has taken place. "The site of Horden, about a mile north of Castle Eden Dene, suggests that there has been very little coastal recession here since Neolithic times: the storm beach and sands form adequate protection. There is also much ballast on the beaches between Crimden and Hartlepool. Between Horden and the mouth of the Wear, and even as far as the Tyne, Neolithic remains occur only sporadically, and the coast is less protected by dunes and shingle. Moreover the limestone is softer, and there is less boulder clay, and for these reasons erosion has been greater." These findings were in large measure confirmed by W.Westgate[3] who was able to show that the rate of erosion was much greater to the north of Seaham than it was to the south. To the north, the average rate of cliff recession was about 3 feet per annum, and at one place near Ryhope the cliff had receded as much as 10 feet in one year. South of Seaham, little or no erosion was taking place.

It seems unlikely that this variation is due solely to

marked changes in the texture and durability of the rocks, though this would account for local differing rates of erosion within a relatively short length of coast line. The answer probably lies in a combination of several non-geomorphological factors. First, the building of piers at the mouth of the River Wear has tended to check the southward drift of material, and consequently the beach to the south of Sunderland has been denied the material which would otherwise have protected it. (The Roker Pier was commenced in 1885 and completed in 1903, and has a length of 2,880 feet. The South Protecting Pier, commenced in 1893, has a length of 2,700 feet.) In this connection it is interesting to note that the engineers[4] responsible for building the sea wall at Seaham could find no obvious indications of a littoral drift of shingle from north to south along this portion of the coast line in conformity with the north to south drift which takes place elsewhere on the east coast. As this was viewed with suspicion, an experimental groyne was built in 1952 and "experience of the working of this groyne has shown that although the direction of the littoral drift is reversed at times for considerable periods, nevertheless year in year out the tendency is

towards the south. A record of wave movements was established while constructional work was in progress, and it was found that during the twelve months from June, 1952, to May, 1953, waves approached the shore from a direction north of the normal on 78 days, south of the normal on 58 days, and at right angles to the shore on 82 days; the record showed that, generally, waves approaching from the north were bigger than waves approaching from the south, and hence would have a greater transporting power; on the remaining 147 days either the sea was calm or there was no record."(5)

Another factor partly responsible for the rapid rate of erosion north of Seaham has been the removal from the beach of considerable quantities of sand and shingle for building purposes. One of the facts that did not fit in with the theory of a north to south drift and which rather puzzled the engineers, was the absence of a large accumulation of beach material in the angle of the cliffs just north of Featherbed Rocks at Seaham, though a photograph taken some 50 years before, shows that there was a very large accumulation of sand and shingle at this corner

of the coast. It appears that the extraction of shingle from this point which took place on a large scale during the construction of the South Dock (opened in 1905) continued for other purposes on a still considerable scale until as recently as 1949. Further north, and particularly near the mouth of Ryhope Dene, the extraction of sand and shingle still goes on. In this way, the beach is denuded of material which would otherwise help to protect the cliffs from further erosion.

South of Seaham, cliff recession is either very slow or non-existent. The reason for this seems to lie in the practice of tipping colliery waste over the cliffs on to the beach, and thus building up the beach and so protecting the cliffs from erosion. This material is gradually moved south by long-shore drift, as shown by the presence of carbonaceous material on the beaches at Hartlepool, Teesmouth, and as far south as Flamborough Head, but the volume of material involved is so great that the sea is unable to transport it all and thus the beach is gradually being built up. The main collieries involved in this method of waste disposal are, from north to south, Dawdon (tipping at Nose's Point), Easington, Horden, and Blackhall. These

are some of the largest collieries in County Durham, and the amount of material deposited in this way, together with waste material derived from collieries further inland, reaches considerable proportions.

It can thus be seen that coastal erosion is most severe to the north of Seaham, and in one place just north of Featherbed Rocks, the slipping of the clay overburden had driven the top of the clay slope landward to within a few feet of the Seaham-Sunderland main road(B.1287). Piece-meal repairs were often done, but the only long-term solution was the building of a sea wall. In 1952 work was started on a 3,700 feet-long wall to run from Featherbed Rock to the mouth of Seaham Dene, the contract price of which was £157,337. The work was completed in 1955; and Seaham now possesses both protection from the sea and an attractive promenade.

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PART TWO

HUMAN AND ECONOMIC BACKGROUND

Chapter 2. The Historical Background to Settlement.

The first recorded evidence of man in the North East is in the third millennium B.C. Numbers were few, and their settlements were at first marginal and perhaps temporary. It was not until about 2,000 B.C. that any considerable influx of people took place, when the Bronze Age Beaker peoples, entered Eastern Britain from the Continent. They were in the main farming people, who, with their cattle, moved inland up the river valleys.

Throughout the last millennium before Christ, Northern England was a cultural backwater, retaining its Late Bronze Age civilization until early Roman times. Iron Age civilization was introduced into Eastern Yorkshire early in the fourth centiry before Christ, and it was gradually extended northwards by the Brigantes - a tribe of people who lived in West Yorkshire and the Pennines. Thus, when the Romans entered Northern England, they came into contact with tribes which still used stone and bronze, but which had long been ruled by peoples using iron.(1)

The Romans came as conquerors, not as settlers, and their only great contribution to the landscape of Northern England was the building of roads and forts, and, of course, a wall. The general life of the people continued almost unchanged. With the termination of the Roman occupation at the end of the fourth century, Northern England was attacked from the north and east by the Picts and the Anglo-Saxons respectively. For the next two centuries, the country between Tyne and Tees (that is, between the Kingdoms of Bernicia and Deira) seems to have been, a land of forests and marshes, almost entirely uninhabited. In the seventh century, the Kingdoms of Bernicia and Deira were joined, and became known as Northumbria. "The blending of Bernician, Deiran and Celtic spirit produced a vigorous Christianity which spread the Gospel, the arts and learning, first among the Anglo-Saxons and later in heathen lands in Northern Europe. In the seventh century, the Northumbrian coast, with its monasteries at Lindisfarne, Jarrow, Monkwearmouth, (and after 640, at Hartlepool), was the centre of Anglo-Saxon civilization".(1)

By the end of the eighth century, Scandinavian raiders

were already beginning to harry the coast. The monasteries were sacked, and by 875 Danelaw was established.

The Normans conquered Northern England with difficulty, and had continuous trouble in retaining their hold upon it. Northern England became a frontier province with a strong emphasis on defence, and from this time, date the great castles (e.g. Durham 1072, Bernard Castle 1112, Hylton Castle 1072), and the rise of the Palatinate.

Although the Romans had made use of coal and iron, it was only from Medieval times that the extraction of minerals became important. By the thirteenth century coal was being exported to London - there is a record of the monks of Tynemouth shipping coal from that port in 1269 - though the first exportation of coal from Sunderland is not thought to have taken place until 1396. The extraction of coal from the shallow seams continually increased, so that by the time of the Civil Wars, Sunderland and the collieries of the Wear became objects of vital importance to the City of London (Newcastle had espoused the Royalist cause), and as a consequence, received a garrison from Parliament. The exploitation of coal, limestone, and lead from Teesdale and

Weardale, led to the growth of small inland villages and towns, and of ports based on localised small-scale industries and trading concerns. But in the main, industry was, at this stage, still complementary to an even more important agricultural economy. Inland, the landscape was essentially rural with a few small market towns, open-green villages, and isolated mining communities. Coal and agricultural produce - mainly wool and corn - were exported from the better placed sea and river ports. The coal export was centred mainly upon the Tyne and Wear; the agricultural produce came from the agriculturally richer hinterland of Stockton and Yarm, both important river ports on the Tees. But wholesale land transport of coal before the invention of railways was uneconomic for distances longer than three or four miles, so that although scattered mining settlements were a feature of the late eighteenth and early nineteenth-century-landscape between Tyne and Wear, sizeable industrial centres of population, based on coal export in particular, were concentrated mainly on these two navigable rivers.

By the end of the nineteenth century, the whole character of the County had changed and the population had increased

enormously. "The full industrial development of the area and the resulting population expansion from 1830 onwards is directly associated with the introduction and immediate expansion of the railway through local initiative backed by a realisation of the rich resources of the region and stimulated by an increasing outside demand (from Britain and overseas) for steam coal for industrial consumption as opposed to the household coal demanded before this time".(2)

The tendency throughout the whole of this industrial development was for the industries to become more and more concentrated in the Boroughs and along the rivers on the eastern side of the County. This was due, probably in the earlier days of the industrial revolution at any rate, to the bad state of the roads. Later on, even after railway communication had been introduced, the same concentration of the industrial and commercial activities of the County continued. The proximity of the greater part of this concentration to the sea ports greatly facilitated the export trade from the Tyne, Wear and Tees, along the banks of which, shipping and the shipbuilding industry greatly increased.

It is this tremendous mining expansion of the 1831-51

period that gave rise to the first outstanding migration of population into this area. The population of the coalfield is estimated to have increased by over 60% in the two decades following 1831. Vigorous development of the Cleveland iron ore began in 1851 and the second half of the nineteenth century saw further industrial expansion, notably in iron and steel and in shipbuilding. This was accompanied by still greater immigration from other parts of the British Isles attracted by the abundance of relatively lucrative employment.

During the course of the nineteenth century the industrial energies of the North East became more and more centred in the basic industries of mining, shipping and shipbuilding, the manufacture of iron and steel, and heavy engineering. Gradually, the majority of other industries which had formerly flourished in County Durham, passed out of existence; and thus County Durham became known as "the home of lost industries".

The 1914-18 war saw a considerable decline in the amount of the foreign coal trade, and the economic depression following on the end of the war, made manifest all too clearly the dangers of this narrowly-based economy. In the large towns the position was particularly distressing; miners,

dockers, shipbuilders, iron, steel and engineering workers in the Tyneside towns, in Sunderland, and in the Hartlepools, faced an ugly future in equally grim surroundings. The situation was so grave that the Government made the North East a special "Depressed Area". During this period many thousands of people migrated further south in an effort to find work. For example, the Hartlepools lost 19% of its population between 1921 and 1939.

The 1939-45 war brought boom conditions, and although the coal trade again suffered a decline, the other heavy industries expanded and prospered. As a safeguard against the return of a depression at the end of the war, industry has since increased enormously in scope and variety. Light industries of all kinds have sprung up to act as a 'buffer' should there be any falling-off in the basic industries, as there has been in both coal and shipbuilding. Trading Estates have been established in various localities, and the factories on these Estates are now employing a larger labour force than is engaged in shipbuilding and shiprepairing. The large chemical industry at Billingham and Wilton has expanded enormously since the war and has absorbed a great

number of the surplus labour force in the area.

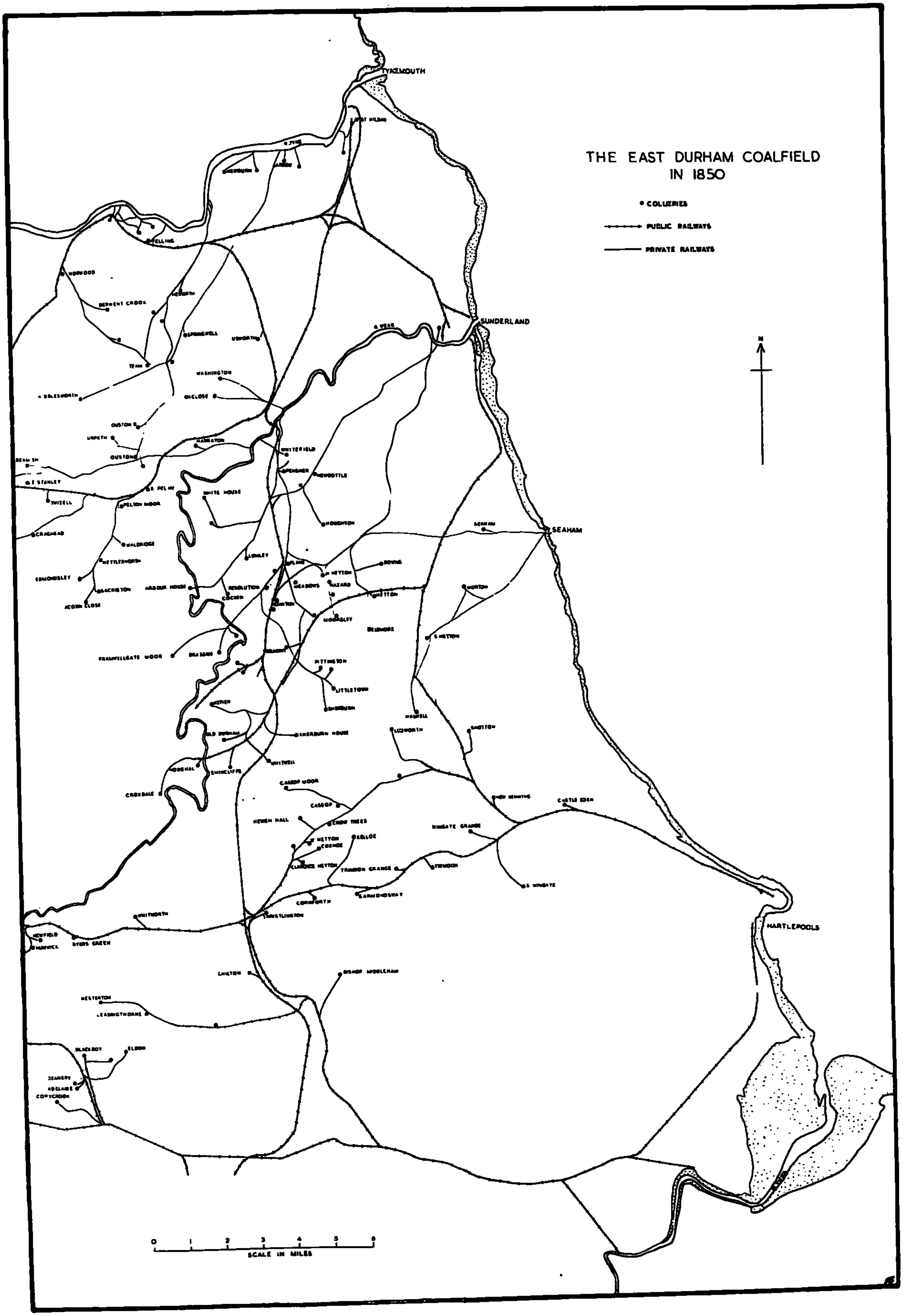
This diversity of industry has brought with it a more evenly balanced economy, and a more even distribution of prosperity throughout the region than perhaps ever before.

Chapter 3. Communications.

The existing railway system of County Durham is based largely upon the network which was built up to carry coal from the mines to the rivers and ports. The area is thus covered by a network of railways (see Fig.5,6, and 7.) - an appropriate feature bearing in mind that it was the birth-place of railways.

In the very early days the coal was taken down in baskets by trains of pack horses to the nearest point on the Tyne or Wear, which could be reached by the keels or coal barges. Lower down the rivers the coal was transferred from the keels to small wooden ships which carried it to London and elsewhere. As has already been pointed out, much of the surface of County Durham and also of Northumberland, has been covered with a thick mantling of glacial drift. The paths and primitive roads which led down to the rivers were easily churned into a thick sticky mud by the trains of pack horses, and the condition of these tracks made their use by wheeled wagons practically impossible.

Rough wooden tracks, known as 'corduroy' roads, were laid down to improve matters, and later on wooden rails were


THE EAST DURHAM COALFIELD
IN 1850
COLLIERIES
PUBLIC RAILWAYS
PRIVATE RAILWAYS
N
TYNEMOUTH
SUNDERLAND
SEAHAM
HARTLEPOOLS
FELLING
NORWOOD
HEWORTH
SPRINGWELL
USWORTH
WASHINGTON
WHITEFIELD
NEWBOTTLE
HOUGHTON
LUMLEY
RESOLUTION
COCKEN
FRAMWELLGATE MOOR
PITTINGTON
LITTLETOWN
SHERBURN HOUSE
WHITWELL
SHINCLIFFE
CROXDALE
CASSOP MOOR
CASSOP
CROW TREES
KELLOE
WINGATE GRANGE
CASTLE EDEN
TRIMDON GRANGE
CORNFORTH
THRISLINGTON
WHITWORTH
BYERS GREEN
CHILTON
BISHOP MIDDLEHAM
LEASINGTHORNE
ELDON
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SCALE IN MILES

Fig. 5.

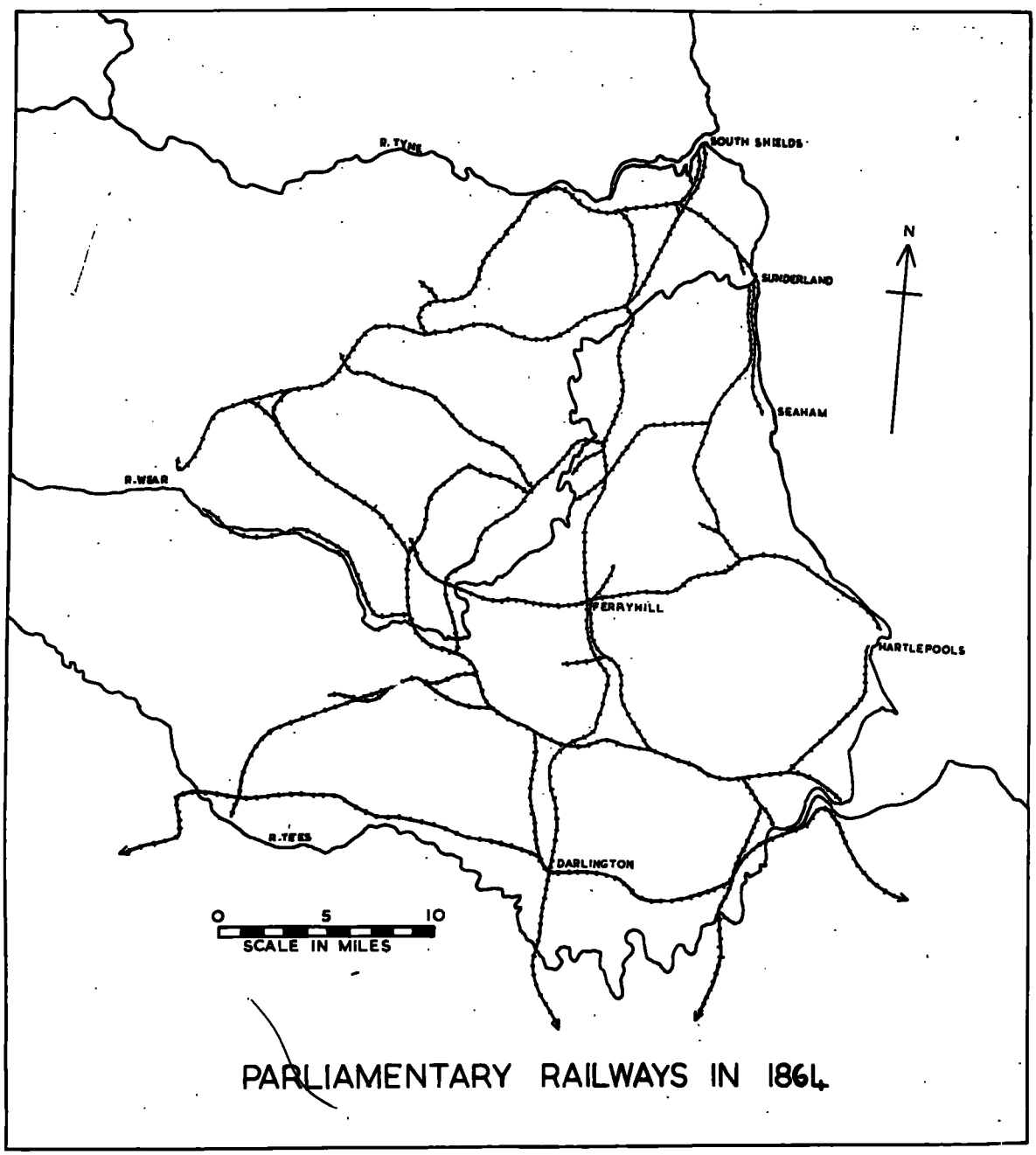
R. TYNE
SOUTH SHIELDS
N
SUNDERLAND
SEAHAM
R. WEAR
FERRYHILL
HARTLEPOOLS
R. TEES
DARLINGTON
0 5 10
SCALE IN MILES
PARLIAMENTARY RAILWAYS IN 1861

Fig. 6.

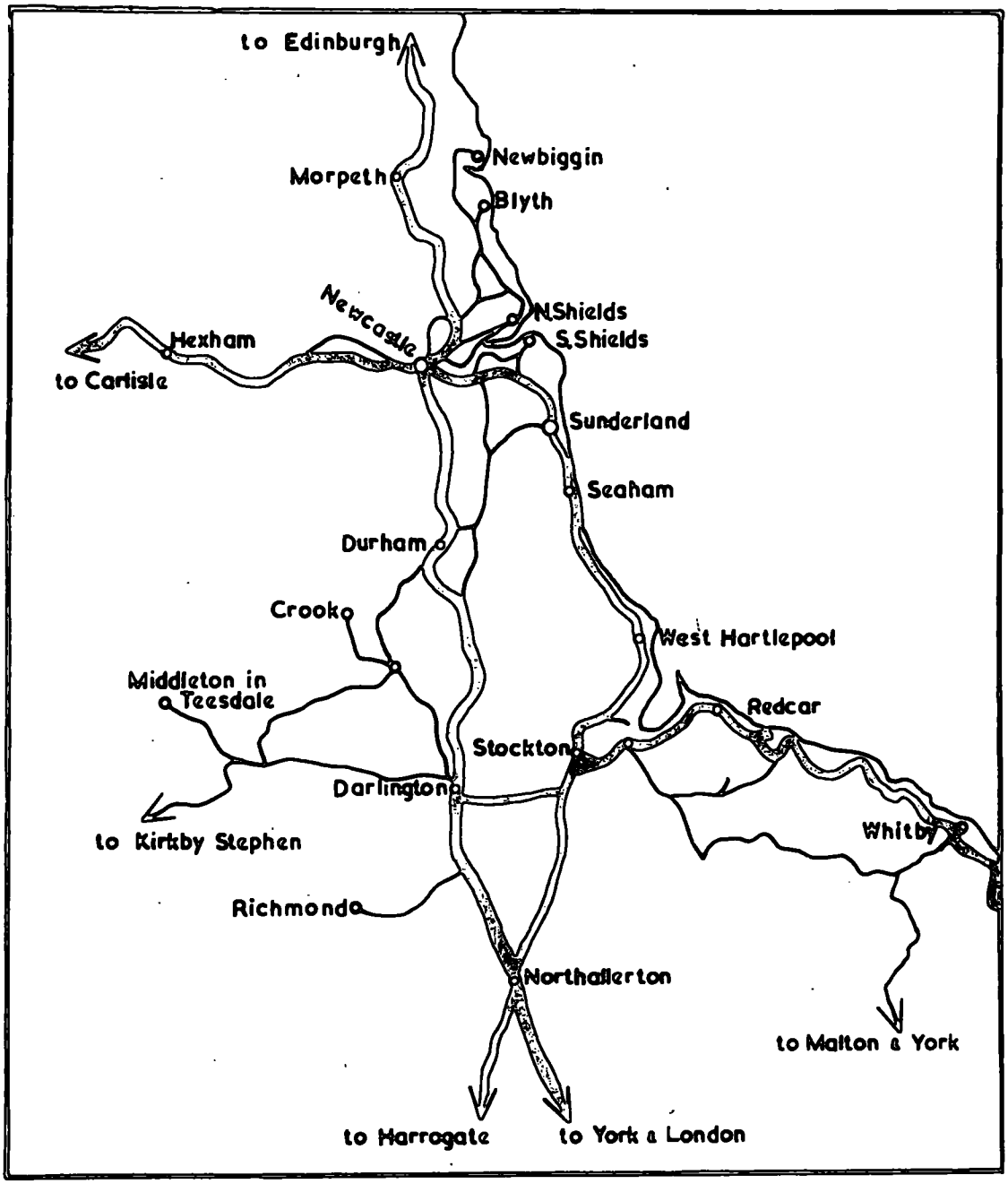

Fig. 7. Map showing the British Railways main lines in use in the area in 1961.

fastened to the top of these thus guiding the wheels of the coal wagons then in use. In time the wooden rail was given an iron surface plate, iron wheels with flanges were substituted for wooden wheels, and eventually cast-iron rails replaced the wooden rails. The railway had been born, though in many cases the wagons were still hauled by animals.

Where the configuration of the land allowed it, however, the loaded coal wagons descended to the rivers by gravity and by means of a system of ropes, pulled up the empty wagons to the pit heads. At Seaham Colliery this system is still practised.

There were several experiments in the latter part of the eighteenth and early part of the nineteenth centuries to harness the power of the Boulton and Watt steam engine for mechanical traction, and in several parts of the Durham Coalfield this was done, especially where it was necessary to haul loaded wagons up gradients. The Rainton Line, built by George Stephenson in 1822, employed a large stationary engine on the top of the East Durham Plateau so that loaded wagons could be hauled up the Magnesian Limestone escarpment, before being allowed to descend by gravity to the port at Sunderland.

Later on, another engine was built so that the line could be extended to Seaham. Surely a different line from Ryhope to Seaham

It was not long before mobile steam engines were invented and the Stockton and Darlington Railway, opened in 1825, was only the first of many such railways built to transport coal from the collieries to the coast and navigable estuaries. Some of these lines were built by Private Companies and were later amalgamated before eventually forming part of British Railways. Other lines were built by individual colliery owners and since the nationalisation of the coal industry they have become the property of the National Coal Board.

The bulk of the traffic movement on both British Railways and National Coal Board lines within the area, is that concerned with the supply of raw materials for the heavy industries together with the movement of heavy commodities to and from the ports. Coal and coke are transported to ports for shipment and, together with limestone, are moved in very large quantities from the mines and quarries to the blast furnaces. Some idea of the type of traffic moving in and out of the region can be gained from Table 1.

In the area as a whole, many railways have been built to serve special purposes, and where the need no longer exists, traffic has either declined considerably, or more often, the lines have become disused. For example, many collieries, lead and iron mines have become worked out, and their railway lines have either been dismantled or fallen into disuse. In addition, in a County where much of the population is in small mining villages, the need for passenger services has been met by the Omnibus Companies, who are capable of very much greater manoeuvrability, and consequently, better service.

The North East area is within 250 miles of all the main centres of population and even the most remote parts of Great Britain are only some 400 miles away. These distances are, in effect, considerably reduced by the fact the the area sits firmly astride one of the most important trunk railway lines in the country - that from London to Scotland. A subsidiary main line runs in a loop from Newcastle, through Sunderland, Seaham, West Hartlepool, and Stockton, to link up with the main line again at Northallerton. Part of this line, from Middlesbrough to Newcastle, is now being used by modern

diesel trains, which are giving a much more frequent and faster service than the steam trains. Long distance steam-engine services are also run, and it is possible to travel direct from either Sunderland or West Hartlepool, to such places as London, Leeds, Manchester, Liverpool, Birmingham and Bristol. In addition, there are services from West Hartlepool to the Yorkshire coast, and also to Lincoln and Colchester. Some, but not all, of these services stop at Seaham. The less important cross-country lines are linked to the main North-South route; for example, from Durham via Bishop Auckland to Weardale and Teesdale, from Durham to Sunderland, and from Ferryhill to Billingham and West Hartlepool.

The pattern of major roads is in many ways similar to that of the railways. There is, for example, the main North-South artery - the A1 - which runs through County Durham from Newcastle in the north to Darlington in the south; and there is also an east coast route - the A19 - which serves Sunderland, the Hartlepools, and Tees-side. The A1 is a good through-route with double carriageways along most of its length, but there are two serious bottle-necks; one where it

crosses the Tyne at Gateshead and the other where it passes through the centre of Darlington. The A19 is not a good quality road, but recently some improvements have been made, especially between Seaham and Sunderland. Besides these two main routes, there is a close network of roads which provide inter-communication within the County.

The omnibus services in the County have a network of routes and frequency of services as complete as those in any other area of England. The main reason for this is that the close pattern of villages in the County has placed the omnibus service - with its flexibility and ability to pick up and put down passengers at any point - at a distinct advantage over its railway competitor which is much more rigid in its operation. Many of the villages lack adequate shopping, social and entertainment facilities, and this means that the housewife makes frequent journeys to the larger towns to do much of her shopping, and the younger members of the family in particular, travel in search of their education and amusements. As can be seen from Figs.19,31 and 41 there is a considerable convergence of omnibus routes on Sunderland and West Hartlepool. Sunderland especially, has routes

converging upon it from nearly all parts of the County. West Hartlepool is more isolated and restricted, but nevertheless is a considerable centre for parts of South East Durham. Seaham has comparatively few services, and is very much within the larger urban field of Sunderland.

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PART THREE.

SUNDERLAND.

Chapter 4. Site and Settlement.

Sunderland is situated at the mouth of the River Wear, with the main settlement on the south bank, and the district of Monkwearmouth on the north bank.

It seems probable that in the Pre-Glacial period the River Wear flowed northwards from Durham to join the River Tyne by way of the now obstructed and filled-in Team valley;(I) and that the present course of the river, from Chester-le-Street to the sea, is a post-glacial cut which formerly drained the glacial 'Wear Lake'. The Wear is the only river which flows across the Permian Limestone from the Coal Measures in the west, and as it is also deeply entrenched into the Magnesian Limestone plateau, this fluvio-glacial origin is widely accepted as the correct one.

The river is not straight, but meanders in big loops as it approaches the sea. There is no flood plain, however, as the river is confined between limestone bluffs of about 100 feet in height. The only flat land is to be found at the foot of these bluffs along a narrow river-side shelf.

Inland from the top of the bluffs, the plateau has been covered with boulder clay which rises fairly rapidly to a height of about 300 feet, and has been scored with small but deep post-glacial valleys known variously as denes or gills.

It is important to realise that the present physical site in few respects resembles the natural physical site, for the river has been considerably altered, especially confined and deepened, and the configuration of the land near to the river has been much altered by the practice of dumping ballast. According to an early description, the mouth of the River Wear at low water was nearly a mile wide. A bar of sand or shingle stretched across its mouth, and at low water the river found its way to the sea by different branches and channels across the low-lying rocks and beds of shingle. Inside the bar, the river widened into a broad expanse for about a mile upstream, where it was contracted and confined in a rocky gorge, the entrance to which was about 220 to 240 feet in width and overhung by high limestone cliffs. The upper end of this gorge was almost blocked by high rocks that stretched across the river

so that as the stream swept towards the lower harbour it could only find an outlet by a narrow channel or "wear" - from which the river is supposed to have derived its name.

According to W.C.Mitchell,(2) "there can be no doubt that a Roman station once stood near the mouth of the Wear. Various places have been assigned as the supposed site, but the high ground overlooking the river at the north end of Castle Street has for generations been accepted by local antiquarians and students of history as the most likely place....The ancient well in the district was for centuries known as the Castle Well, and ancient sculptured stones of supposed Roman work have been found near it. The ancient building would command a view of the mouth of the river, and not only dominated the passage of the river, thus protecting the fords at Deptford and Hylton, but also possessed great facilities for defence, having the high cliff and the river on the north; the steep sides of the Gill(Galley Gill) on the west; a deep fissure in the limestone cliff on the east, thus leaving only the south to be protected by a wall and ditch." An earlier writer, however, had stated that "from

the discovery of a supposed Roman pottery, in 1849, during the excavations for the docks, it has been inferred by some that Sunderland occupies the site of a Roman settlement.... evidence is scarcely conclusive; and as no other remains have been found, nor any vistage of communication with the recognised Roman roads, whilst ancient writers are silent in respect of the place, sufficient evidence has not been adduced to establish a conclusion."(3) This view is supported by officials at the local Museum, who are quite definitely agreed that there was no Roman settlement at Sunderland. There is some evidence, however, that a Roman coast road from the Tees to the Tyne crossed the Wear at Hylton ford.

The first undoubted permanent settlement was in two distinct units. In the year 674 A.D., King Egfrid of Northumbria gave Benedict Biscop seventy hides of land(about 7,000 acres) at the mouth of the Wear on the left bank, and ordered a monastery to be built there. Thus Monkwearmouth was founded. Later, Biscop was given three hides of land on the south bank of the river, and this land became known by the monks as "Sondralande", which means separated land, presumably because it was separated from the larger estate

of the monastery on the northern bank of the river.(The name of Sunderland may also be accounted for by the fact that the land was almost separated, or sundered, from the mainland by the Wear on the north, the sea on the east, and Hendon Dene on the south.)

Both Monkwearmouth and Sunderland(or South Wearmouth as it was sometimes called) were built on high land commanding a view of the river mouth. The sites may have been defensive ones, for from the time the Romans withdrew until 1066 at least, sea raiders were common along this coast, and indeed in 867 the buildings were almost totally destroyed by Danish raiders. On the other hand, in common with other ecclesiastical settlements such as Lindisfarne and Hartlepool, the buildings were placed in exposed positions, almost inviting attack.

The harbour at the mouth of the River Wear, "Wiranmuthan", or "Sundorlande" as Bede called it, was well known in Saxon and Danish times, both on account of the maritime facilities it afforded to the small vessels which then navigated the coast, and perhaps more so on account of the celebrated monastery which stood on the northern bank.

About the year 930, South Wearmouth was restored to the

See of Durham by King Athelstan, and thus the little settlement became known as Bishopwearmouth to show that it formed part of the Bishop's possessions and to distinguish it from Monkwearmouth which belonged to the monks of the Benedictine Monastery.

There is no mention of Sunderland, or indeed of County Durham, in the Domesday Book, probably because the region had been devastated and virtually depopulated by the Normans, but less than a hundred years later, there is evidence from the Charter of Bishop Pudsey, granted in II54, that settlement was well established here and that the port was becoming of some importance. Amongst other things, the Charter provided that disputes between burgesses and foreign merchants should be determined within three tides, and all merchandise brought by sea should be landed before sale, except salt, and herrings which could be sold on board.

The village of Bishopwearmouth is mentioned again in II80 in the Boldon Book compiled, by order of Bishop Pudsey, in much the same way as the Domesday Book. "In Wearmouth (Bishopwearmouth) and Tunstall are twenty-two tenants in villeinage; and six cottagers, whose work, rents, and services are like those of Boldon. The carpenter, who is

aged, holds twelve acres for life, for making carts and harrows for the tenants. The smith has twelve acres and finds his own coal. The two vills pay twenty shillings for cornage, or cattle tax, and provide two milch cows. The demesne is farmed with a stock of twenty draught-oxen, two harrows, and two hundred sheep, the rent including the mill is twenty pounds; the fisheries pay six pounds and the Borough of Wearmouth pays twenty shillings." No particulars of Monkwearmouth are given in the Boldon Book as the lands there belonged to the Priory of Durham, as successors to the Monastery of Monkwearmouth.

Evidence that the port was becoming a place of increasing maritime importance is to be found in the charter granted by Henry III in I247, which gave permission for a Merchants' Guild to be established, and enabled the burgesses to buy and sell whatever merchandise they thought fit, without the payment of tolls. According to Hutchinson,(4) Sunderland "was not anciently a port of note, yet not totally unfrequented .....yet we cannot form any great estimate of this port, when we observe in Hatfield's Survey(I346), that John Hedworth had an ancient right of drawing a net in the very

haven". In the same document it was stated that Menvill "held a place called Hynden(Hendon) for the plying of vessels", which is commonly supposed to be the earliest mention of Sunderland as a shipbuilding port. Bishop Hatfield leased the Borough of Sunderland, with the fisheries, to Richard Hedworth of Southwick; and from that time until the Reformation, the borough was leased by successive Bishops of Durham to the Hedworth, Bertram, Bowes, Lambton and Ettrick families. This fact, perhaps more than any other, was responsible for the slow development of the port during this period and for its minor importance as compared with Hartlepool which not being leased to a private family, was able to monopolise trade with the Palatinate.

It was not until the early sixteenth century when the powers of the Prince-Bishop of Durham were curtailed by Henry VIII and as a consequence the port of Hartlepool lost its virtual monopoly of trade with the Palatinate, that Sunderland began to become a place of considerable note. The town gradually increased in size, and it is probable that about the latter end of the reign of Elizabeth, or in that of James I, the coal trade began to find its way via the

Wear in considerable quantities. Coal staithes for loading keels were erected on both banks of the river, and a third settlement began to grow on the south bank between Bishopwearmouth and the sea. This third town was known specifically as Sunderland, and was beginning to gain a reputation for shipbuilding. Because this new township had not yet been granted a Charter and was instead governed by a Bailiff appointed by the Bishop, it had no powerful Trade Guilds which prevented the settlement or employment of people from other parts, and between the years I600 and I630, a considerable number of Scottish families and foreign merchants settled in the town.

In I634, Bishop Morton, desiring to encourage the rising trade of the Borough, granted a Charter of Incorporation to the burgesses and inhabitants of Sunderland. The preamble of the charter stated that "Sunderland is, and time out of mind hath been, an ancient borough, known by the name of the New Borough of Wearmouth, containing in itself a certain port where, from which, in which, and through which, very many ships and other vessels used by mariners, as well within the Kingdom of England as from

foreign ports come and ply, introducing and importing merchandise, goods, and other saleable articles, and exporting from the said port sea-coals, grindstones, rubstones, and whetstones and other merchandise".

Sunderland's importance was greatly increased in I642, from the circumstance that Newcastle had espoused the Royalist cause and an embargo was laid on all ships in that port to prevent them supplying the Parliamentary City of London with coal. This importance was only temporary, however, and did not lead to any great increase of settlement. In fact, by I669 the state of the harbour and the river was causing much concern. A petition stated "that the harbour and river being very commodiously situate for the shipping of vast quantities of sea-coles plentifully gotten and wrought there, for supply of all our subjects of our realm of England, who can fetch the same, as also of foreign ports, is of late so much gorged, stopped up, and choked: and by the many shoals, sandbeds and much breach and rubbish daily increasing in the same, is almost rendered unnavigable." Little, if anything, seems to have been done until the River Wear Commissioners were appointed in I7I7. However, the situation was not

without its advantages, as is revealed in an extract from "England Displayed"(published in 1769 - author not known) - "The port was formerly so shallow, that ships were obliged to take in their lading in the open road, which was sometimes attended with very great danger to the keelmen, who bring the coals down to the ships; on this account the vessels which loaded here, were usually smaller than in the neighbouring ports; but as they ride in the open sea, they no sooner get in their lading than they are ready to sail, which is a considerable advantage, as they have been known to steer from thence, to deliver their coals in London, to beat up against the wind in their return, and to get back before the ships at Shields, which were loaden before them, had been able to get over the bar".

In 1755 it was stated that the channel at the mouth of the harbour was so "very narrow and shoal" that ships drawing only 6 or 7 feet of water were often prevented from getting out to sea, and "withal was so very crooked and oblique that the wind which served for conducting ships out of the harbour was unfavourable for conveying them away to the southward where almost the whole trade lay, and that

the wind which was fair to bring them from thence was as unfavourable for them entering the harbour."

By the end of the I8th century, considerable improvement to the river had been effected, including the formation of a regular channel, which necessitated the removal of large quantities of limestone rock from the bed of the river. Trade prospered, and as a result the town expanded. What had hitherto been three villages or townships(See Fig.8.) now began to amalgamate into one large town. Sunderland and Bishopwearmouth grew towards each other along the south bank of the river, and another small township, Bishopwearmouth Panns, was formed between them. This small township was probably gained from the river by embankments and derives its name from the ten salt pans situated there. On the north bank of the river, the population was drawn from the old township of Monkwearmouth down towards the river, and here a new and larger township called Monkwearmouth Shore was established. The bulk of the population was thus situated along both banks of the river, and the town was divided into five separate parishes(See Fig.9.). In I796 the settlements on the north bank were joined to those on the

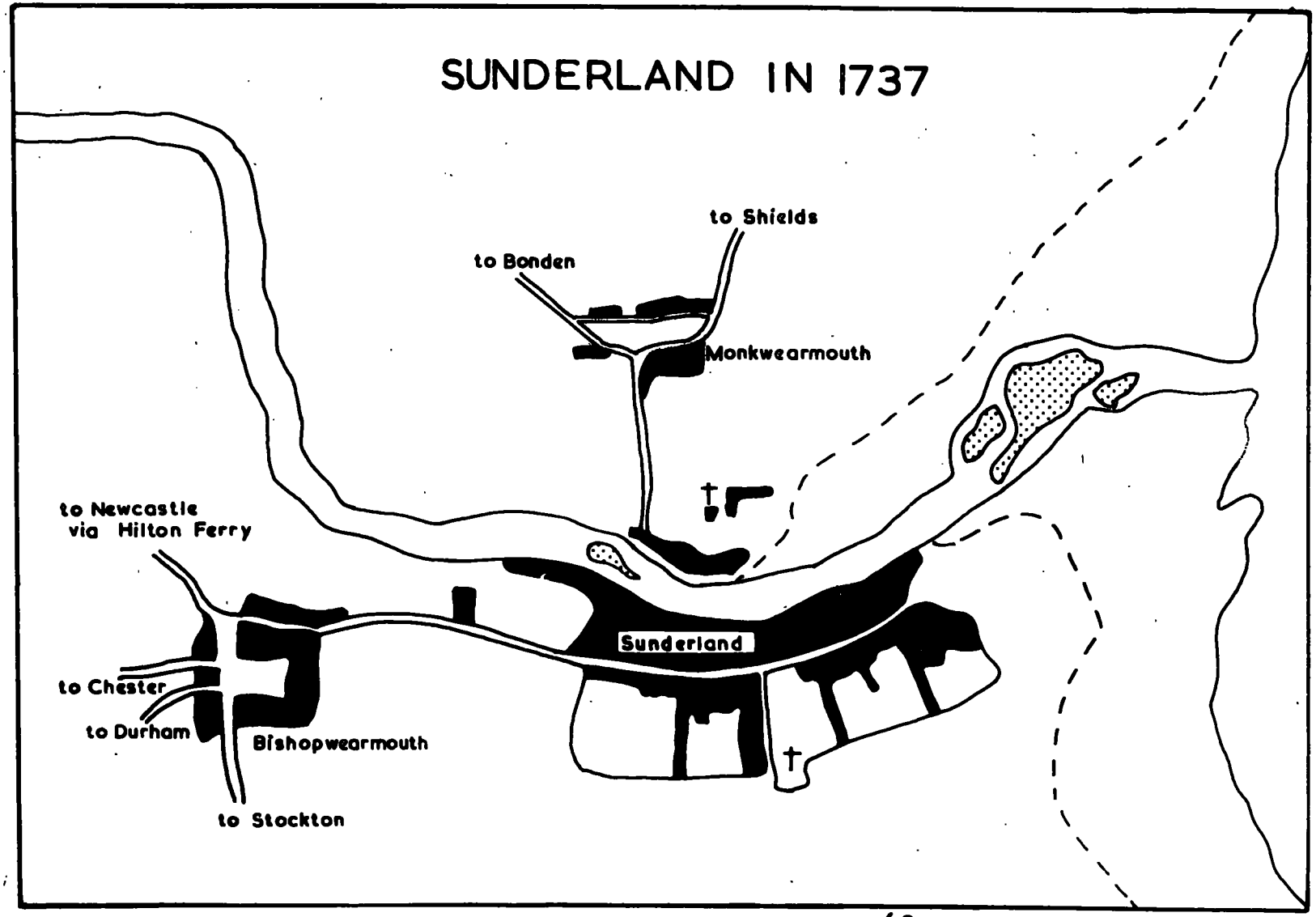


Fig. 8. Map to show the form of Sunderland in 1737. (from a map by Burleigh and Thompson)

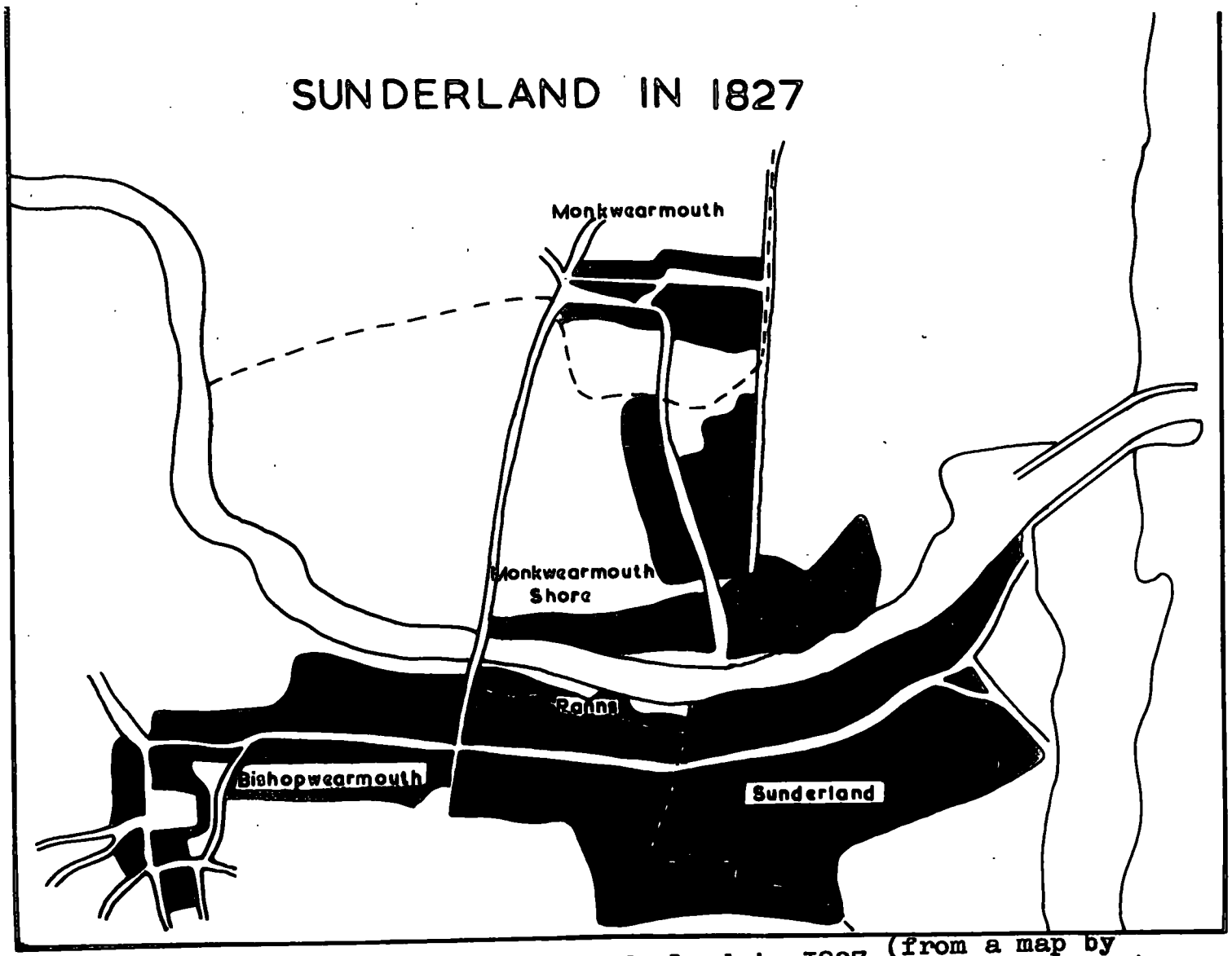


Fig. 9. Map to show the form of Sunderland in 1827. (from a map by Thomas Robson)

south by means of the Wearmouth Bridge; formerly they had been linked only by ferries.

The eighty years between I750 and I830 were a period of considerable prosperity as Sunderland benefited a great deal from the effects of the Industrial Revolution. The number of ships belonging to the port, the trade, and the population at least doubled during this time, and in some respects the increases were even more spectacular. For example:- I) In I753 there were I90 vessels belonging to the port, and in I8I5 there were 600,

2) Coal shipments in I750 were 430,034 tons, and in I820 they were I,II5,8I2 tons,

3) Estimate of population in I78I was 20,940 and in I83I was 4I,3I3.

In I836 the Durham and Sunderland Railway was opened and as a result Sunderland's hinterland was considerably extended. The coal trade so increased that the docks at this time were not large enough to cope with the increase of traffic. In I837 the North Dock was opened, in I850 the South Dock, and in I868 the Hendon Dock.

The Commissioners gradually improved the condition of the river, the piers being altered and extended, the channel straightened and deepened, and the contracted parts widened.

Since I857 the town has expanded as shown on the Age of Settlement map(Fig.IO). It can be seen that the town has expanded concentrically around the original urban nuclei, except for the more recent development which has been in a predominantly south-westerly direction, where building since I9I5 has taken up nearly as much land as all the development before I9I5.

Reference to the Land-Use map(Fig.II) shows that industry is predominantly located along both banks of the river and along the eastern sea-board south of the entrance to the port. All the flat land suitable for industrial development has thus been taken up, and Sunderland's shipyards and industries find themselves jammed along the narrow river-side shelf at the foot of the bluffs. It would seem, therefore, that industrially Sunderland has reached its optimum size, and that the rapid expansion of the eighteenth and nineteenth centuries is unlikely to be repeated.

It will be seen that the business and commercial centre,

and the greater part of the residential area are situated on the south side of the river in spite of the fact that the first settlement in Sunderland was at Monkwearmouth on the north bank. This is most probably due to the fact that most of Sunderland's contacts are with areas south of the Wear rather than north of it, as will be demonstrated in succeeding chapters.

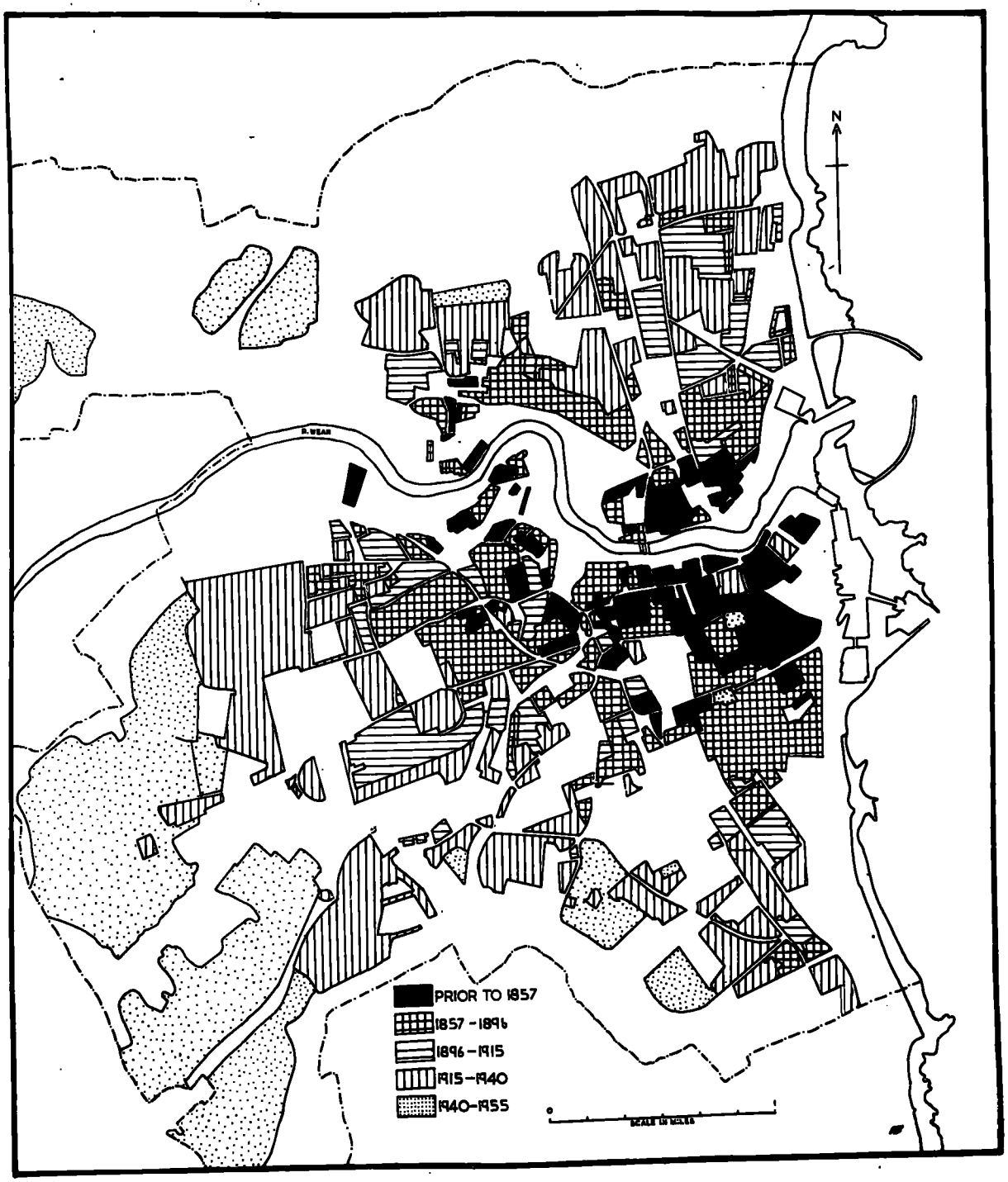


Fig. 10. Map of Sunderland showing stages in the growth of the town.

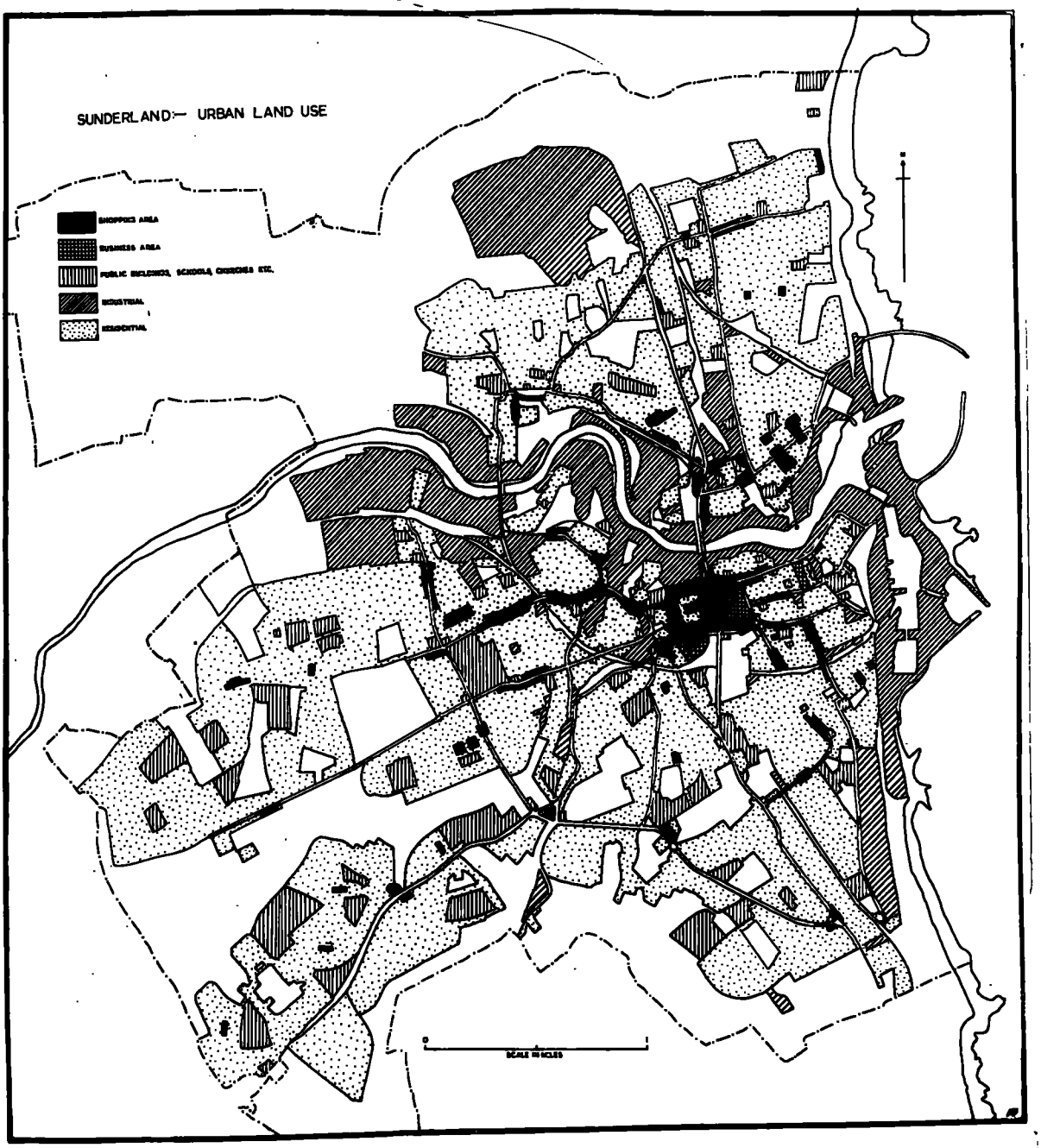

SUNDERLAND:— URBAN LAND USE
SHOPPING AREA
BUSINESS AREA
PUBLIC BUILDINGS, SCHOOLS, CHURCHES ETC.
INDUSTRIAL
RESIDENTIAL

Fig. II.

Plate I.

The entrance to the River Wear at Sunderland.

North of the River Wear is the part of Sunderland known as Roker; the famous Roker Park Football Ground can be seen at the top-left of the photograph. The North Dock is on the left bank of the river and is now little used except by small privately-owned fishing craft. In the centre of the photograph is the main entrance to the South Docks via the Half-Tide Basin. South of the entrance are the main oil installations, and on the opposite side are the repairing berths and craving docks of T.W. Greenwell & Co. Ltd. In the centre-foreground is Hudson Dock North, with the main warehouses and transit sheds on the left and the marine engine works of George Clark & Co. on the right.

Plate II.

Sunderland South Docks and South Outlet.

In the centre of the photograph are the main coal staiths that serve the large collieries immediately to the south of Sunderland. The Collier on the left is being loaded by the Electric Coal Belt Conveyors. At the centre-top are the shipbuilding yards of Messrs. Bartram & Son, and as can be seen the ships are launched direct into the South Outlet.

Plate III.

The River Wear at Sunderland.

This photograph shows one of the busiest reaches of the river. The Wearmouth, Lambton and Hetton Coal Staiths can be seen in the centre, with Monkwearmouth Colliery on the right, and the Electric Supply Station built over the Hetton Colliery Railway on the left. At the top-centre are the shipyards of Sir James Laing & Sons Ltd. The photograph shows the narrow and constricted nature of the river and also illustrates the way in which the shipbuilders have made use of the meandering nature of the river at this point by avoiding the steep bluff side and aligning their yards so as to gain the full width of the river for launching.

POPULATION.

Chapter 5.

There is no reliable statement of the population of Sunderland prior to the census of 1801, but by piecing together various items of information it is possible to form a picture of the growth of the population before this date. According to Hutchinson (4) the population in 1481 was 1,300. From the register of burials in Bishopwearmouth in 1681, it appears that the united populations of Sunderland (Wearmouth) and Bishopwearmouth did not exceed 2,490 (Fordyce). As the third township of Monkwearmouth only had a population of 1,103 in 1801, it would appear reasonable to agree with Hutchinson's estimate of 3,090 in 1691.

By 1719 however, when Sunderland was made into a separate Parish, the population of this township was said to number 6,000 so that a reasonable estimate for the whole population at this time would be about 10,000. During the course of the eighteenth century, for reasons outlined in previous chapters, both the area and the population of Sunderland increased considerably, so, that in 1781 Hutchinson estimates that there was a population of 20,940.

At the first census in 1801 the population numbered 25,395 and was split up into five separate townships. On the north bank of the river the population of the new township of Monkwearmouth Shore had outstriped the population of Monkwearmouth itself by over 3,000, but the bulk of the population was established on the south bank in the other three townships. Sunderland with 12,000 inhabitants had twice the population of Bishopwearmouth, whilst the small township of Bishopwearmouth Panns accounted for only 564.

Between 1811 and 1851 the population of Sunderland as a whole more than doubled. The absolute and percentage increases are shown on Figs. 12 and 13. Mitchell lists the following factors as being responsible for "this rapid increase in the population and wonderful growth of the town": -

1) The appointment of the River Wear Commissioners in 1717. This led to the improvement of the harbour, building of piers etc.

2) Erection of the Wearmouth Bridge in 1796.

3) Opening of new collieries in the district.

4) Introduction of steam power and railways.

5) The facilities the town afforded for the shipping trade.

6) Increased importance of the town when made a Parliamentary Borough in 1832.

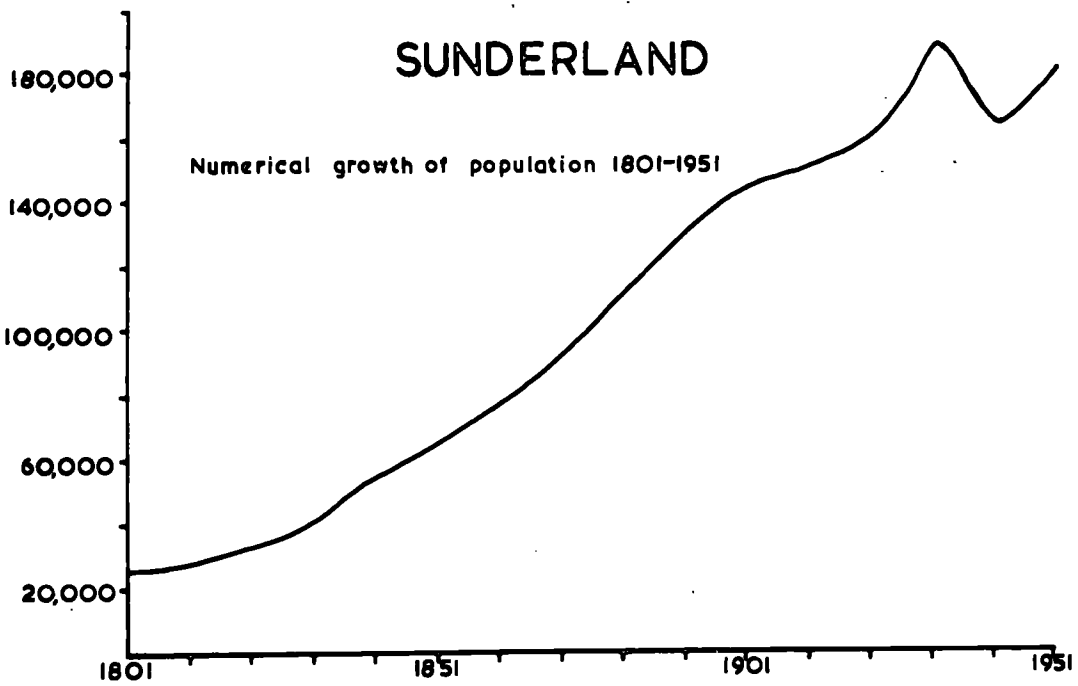
Between 1851 and 1891 the population of Sunderland again doubled, but thereafter the rate of numerical increase began to slow down, and after 1906 there began a series of alternating booms and slumps in ~~which~~ the shipbuilding industry* which were responsible for a certain amount of emigration from the town. The effect of the slump in 1906 can clearly be seen from the graph Fig. 13, for whereas prior to 1901 the population had been increasing by about 15,000 every ten years, the decade from 1901-11 showed an increase of only one third of this.

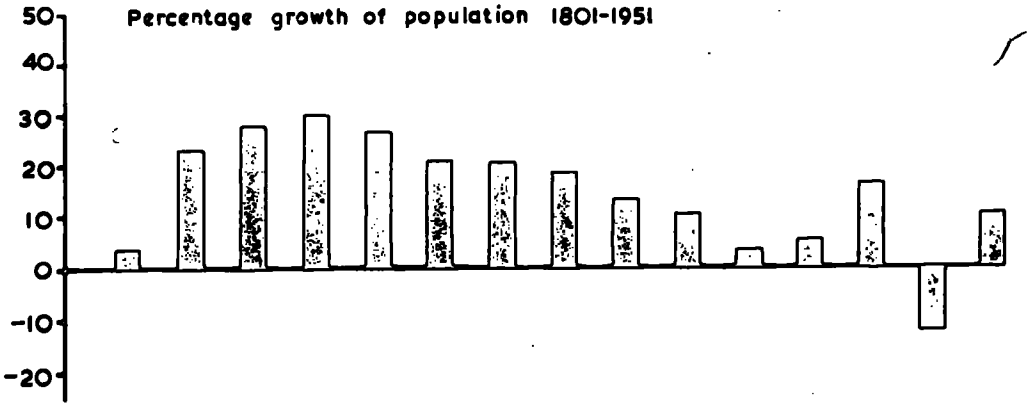
The full effect on the population of the great depression between the wars is not fully brought out in the graphs and there is in fact a spectacular increase between 1921-31; but this was caused by the amalgamation of Fulwell and Southwick into the Borough of Sunderland, and almost certainly masks an actual decrease in population due to unemployment and subsequent emigration. The estimate of population for 1941 shows that Sunderland had lost 22,314

* See next chapter for more detailed description.

people since 1931 - a 12% decrease, and although some of this loss was due to causes arising from the war, many of these had left the town before the outbreak of hostilities. In 1951 the population had increased again to 181,524 but this was still 4,300 less than the 1931 population.

The industrial structure of Sunderland is indicated in Figs.14 and 15.(5) In a total working population of 85,460 27% are employed in shipbuilding and allied industries, and this figure represents 51% of all those employed in the Extractive or Manufacturing Industries. 13,754 men find employment in shipbuilding or marine engineering, out of a total of 56,461 male employees. Thus, in spite of the fairly wide industrial basis, one in four of Sunderland's male employees is directly concerned with the shipyards; a fact which, though perhaps inevitable, still gives rise to much concern.





Figs I2 and I3.

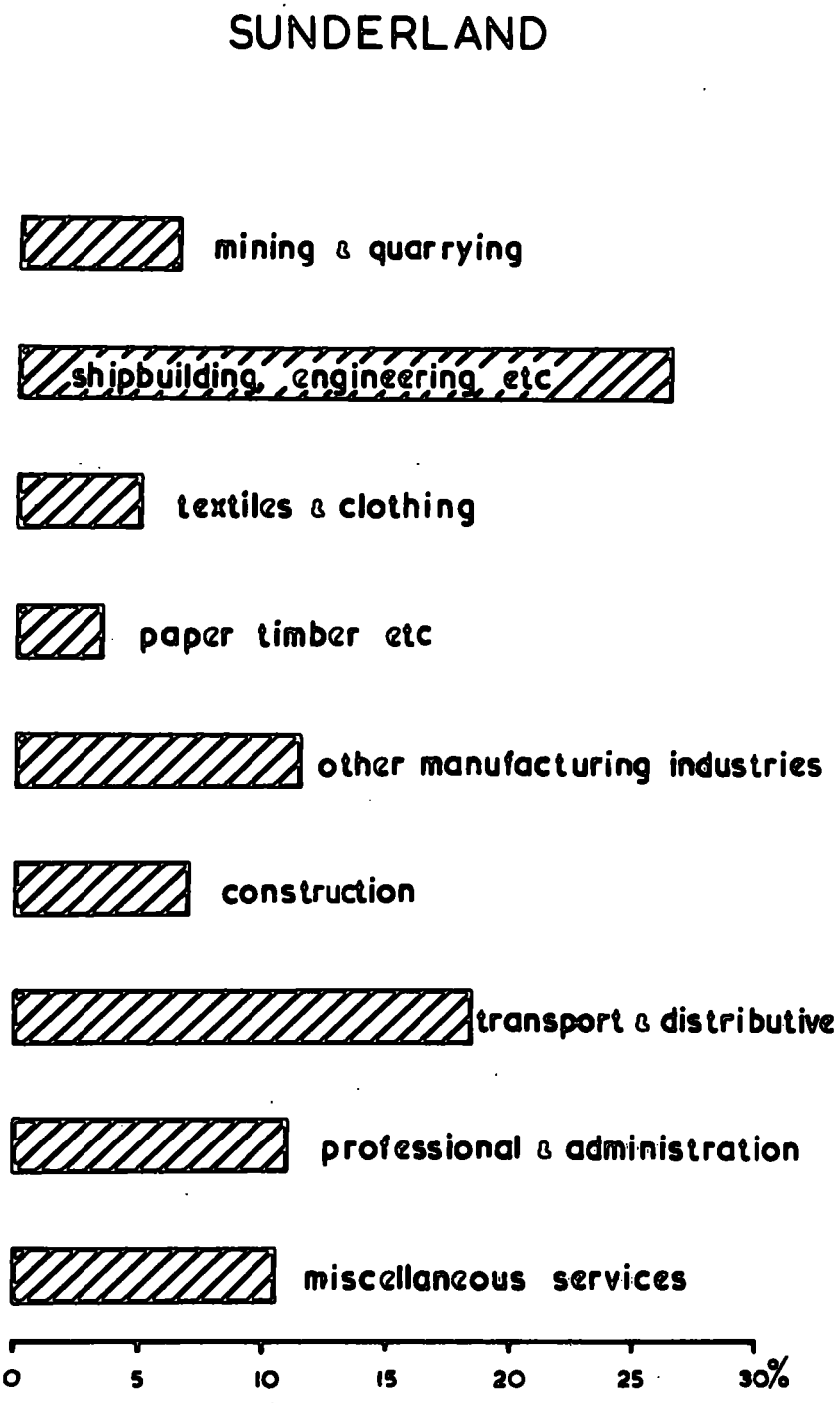


Fig. I4. Diagram showing the percentage distribution of the working population of Sunderland by occupation.

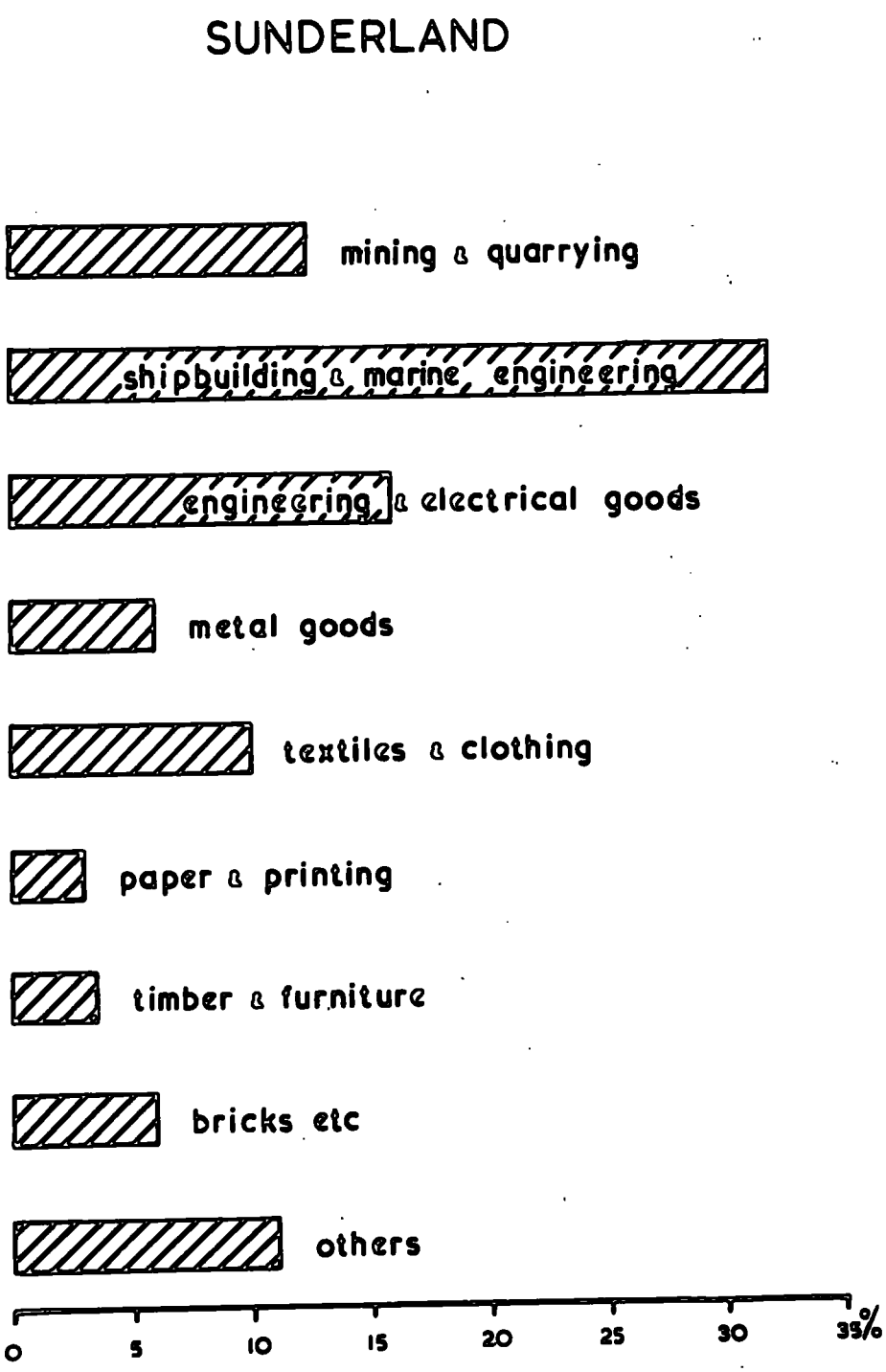


Fig. I5. Diagram showing the percentage distribution of population in the Extractive and Manufacturing Industries.

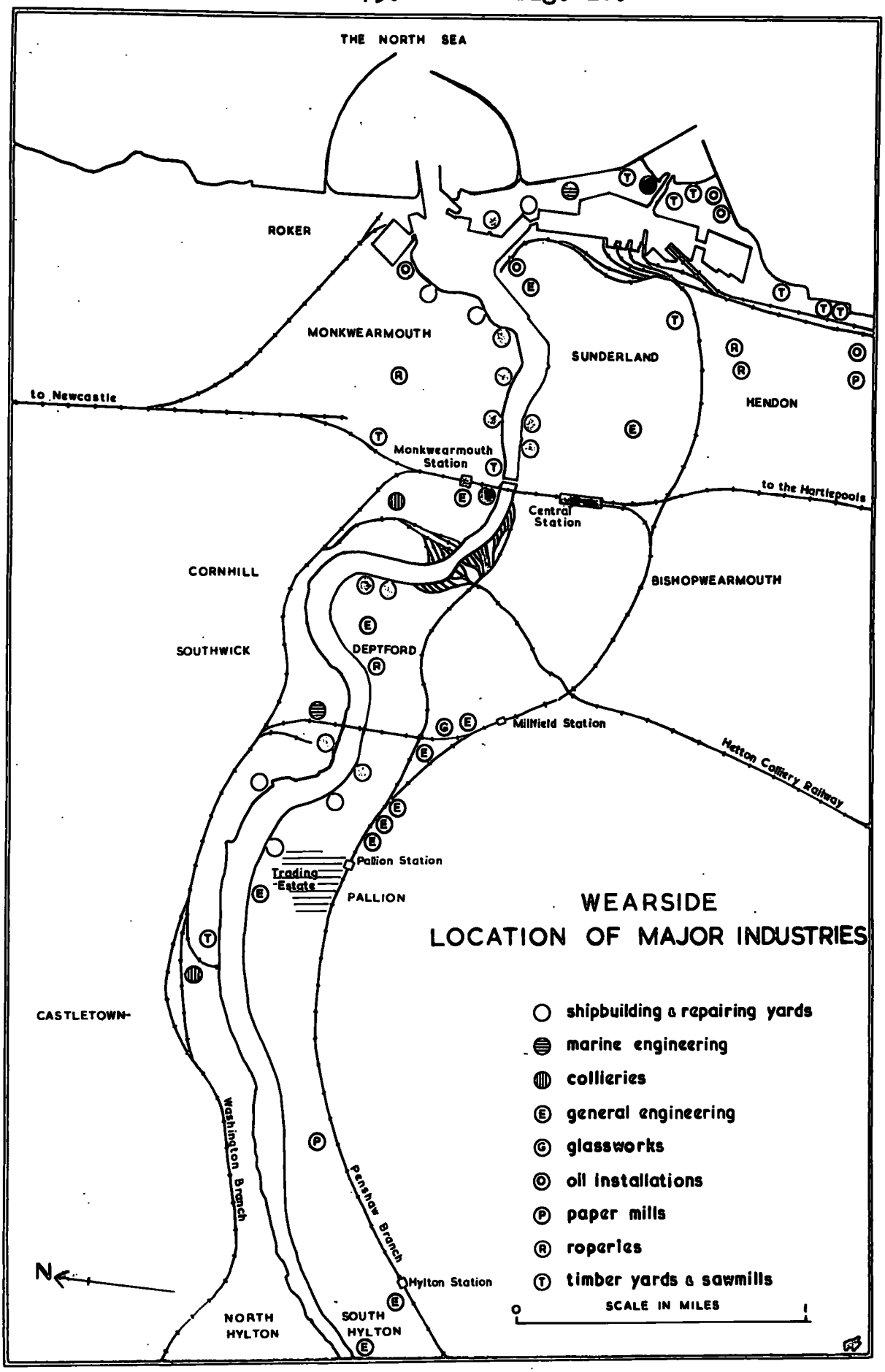
Chapter 6.

INDUSTRY IN SUNDERLAND.

Reference to the Land-Use map and Location of Industries map (Figs.11 and 16) will show the major industries predominantly located along both banks of the river and on the eastern sea-board south of the entrance to the port. These are coal mining, shipbuilding, marine engineering, and the industries wholly or partially dependent on shipbuilding. The capital-goods industries, such as iron and steel castings, aeroplane engines, mobile cranes, glass, paper, and electrical equipment etc., are widely dispersed over the town. The smaller industries, manufacturing consumer goods, are principally located in the immediate vicinity of the town centre.

The extractive industries of mining and quarrying employ a total of 5,600 men, or approximately 10% of the total insured male workers. Most of these men are employed at Monkwearmouth Colliery which was sunk in 1826, and is situated on the north bank of the river, a few yards west of Sunderland Bridge. Although the shaft is on the north side of the river, most of the workings are conducted under the

Fig. 16.


THE NORTH SEA
ROKER
MONKWEARMOUTH
SUNDERLAND
HENDON
to Newcastle
Monkwearmouth Station
Central Station
to the Hartlepools
CORNHILL
BISHOPWEARMOUTH
SOUTHWICK
DEPTFORD
Millfield Station
Hetton Colliery Railway
Pallion Station
Trading Estate
PALLION
CASTLETOWN-
Washington Branch
Penshaw Branch
Hylton Station
NORTH HYLTON
SOUTH HYLTON
N
WEARSIDE
LOCATION OF MAJOR INDUSTRIES
shipbuilding & repairing yards
marine engineering
collieries
general engineering
glassworks
oil installations
paper mills
roperies
timber yards & sawmills
SCALE IN MILES
0
1

river towards Ryhope on the south side. Most of the coal is shipped at the staiths bordering the colliery.

Quarrying is an industry of more note in the past than it is at present, for at one time the port possessed a near monopoly in the trading of lime, being the only port from the Humber to the Forth engaged in this business. There were seven works in the district, the largest being at Pallion, where there were 15 kilns, burning annually about 30,000 tons of limestone. In 1819 there were 25 to 30 sloops, of from 40 to 100 tons each, employed in the trade, which was mostly to the ports of Yorkshire and eastern Scotland. The lime was used for agricultural purposes. Today, limestone is quarried from the large workings at Fulwell, and is used mainly for agriculture and colliery dusting, but also for blast furnaces and foundries. There is a very important Dolomite quarry at South Hylton, about $2\frac{1}{2}$ miles west of Sunderland, which is worked by the nearby Washington Chemical Co. Ltd., and a sand quarry at Grindon, which at one time was famed for its grindstones, large numbers of which were exported. At Ryhope, south of Sunderland, is a firm which advertises that its products are

"washed, screened and kubitized gravel, windblown sand, sea sand, and path gravel". This is significant in view of what was said about coastal erosion (page 21).

However, it is shipbuilding(6) which dominates the economy of Sunderland; the industry here accounting for no less than 24% of the town's insured male workers. The River Wear has long been famous for its shipbuilding industry and the town of Sunderland claims with some justification to be the largest shipbuilding town in the world. Though it is true that the shipbuilding output of other rivers has on many occasions exceeded the output of the Wearside yards, the fact remains that the Sunderland tonnage is produced from shipyards situated within the County Borough, whereas in the cases of the Tyne and Clyde the shipyards are spaced along the rivers and situated in a number of towns. The following examples give a general illustration of comparative figures of production:- (in tons)

	Sunderland	Wallsend	Glasgow	Greenock	Belfast	Birkenhead
1947	193,674	82,722	142,324	34,275	121,882	54,682
1948	177,876	77,257	170,103	44,576	102,289	64,785
1949	181,543	64,003	153,913	41,291	97,353	56,371
1950	192,921	89,280	155,426	67,028	131,720	67,500
1951	197,921	98,793	193,646	42,425	118,554	69,100

The first reference to shipbuilding on the River Wear was

in 1346 when, as stated in a previous chapter, Thomas Menvil was building ships at Hendon. But, following Menvil, there is scant reference to the industry over a long period of time, and it would appear that there have probably been considerable gaps when there has been no shipbuilding at all. However, with the growth of the coal trade, shipbuilding gradually gathered momentum during the 17th and 18th centuries, so that by the time of the Napoleonic Wars (1801-1815) the number of shipyards on the river had increased to fifteen and, after a period of postwar depression a boom period from 1835 to 1840 increased the numbers still further (See Table 9). "At this period there were wood shipbuilding yards from the mouth of the river to within a mile of Lambton Castle, with Thomas Lanchester's yard adjoining the estate boundary".(7) A further depression in the forties was followed by a boom during the Crimean War and in the sixties the number of yards had increased to about sixty. Up to about this period all the ships were made of wood, and were in the main very small sailing ships with an average length of about 100 feet and a gross tonnage of less than 300 tons. But, times were changing, and the second half of the 19th century witnessed

some revolutionary changes in ship construction - from sail to steam, from wood to iron and from iron to steel, - with a corresponding increase in the gross tonnage.(See Table 9).

At the beginning of the 20th Century, shipbuilding was flourishing on the river, and during the year 1901 more tonnage was launched than ever previously, the number of yards then being 13. The peak years of output were 1905-1907 when the tonnage again reached a record, and represented 18.5% of the total produced in Great Britain. It was during this period that the firm of Messrs. William Doxford and Sons Ltd., twice won the Blue Riband of Shipbuilding by launching more tonnage than any other yard in the World.

This boom was followed by a severe depression prior to World War I, but 1912 again saw the yards working at full pressure and when the 1914-1918 War began Wear shipyards were at their busiest. During the war many yards on the river were devoted to the production of Admiralty vessels of all kinds - Doxford's alone building 21 destroyers during the period. In spite of this additional naval work, the output of Merchant Vessel tonnage increased rapidly so that in 1918 the tonnage launched was 267,759.

With the ending of World War I the yards reverted to the production of the type of vessels which had been produced prior to the War and a boom period followed for the next two years, when altogether 130 ships were launched, over 50% of them being for foreign owners. But before 1920 was half-way through there were signs that depression was approaching. Prices rose to new heights and contracts were cancelled and suspended owing to the rapid slump in freights and the selling of ex-enemy ships by the Government for less than half the cost of building. By 1921 the depression had definitely set in; the position worsened in 1922, and by 1923 the output had dropped to 17 ships of 56,522 gross tons. 14,000 men were out of work in Sunderland and most of the remainder on short time. A short-lived revival in 1924 was again followed by depression and by the end of the year fewer than half the berths were occupied and only two more orders were reported to be in hand. The depression deepened in 1925 and 1926; two yards passed out of existence and unemployment in the town approached 20,000. Output rose in 1927, 1928 and 1929, and unemployment declined somewhat, but launchings again declined in 1930 and this was only the prelude to the most

acute depression ever experienced in Sunderland. In 1932, for example, only two ships were launched, both of them colliers built by the same firm and totalling only 2,628 gross tons.

"Sunderland was in the trough of the worst depression in its history. For many thousands it was a veritable slough of despond. Unemployment figures rose to about 30,000..... In the shipyards grass grew in the berths; machinery and plant stood idle. In the town the streets were full of men filling in their time - after 'signing the book' at the unemployment exchanges - by wandering up and down".(7)

During this period the National Shipbuilders' Security Ltd. was formed to eliminate redundant building capacity in the shipbuilding industry of Britain, and under this rationalization scheme, Sunderland lost four of its shipyards. This policy of scrapping some yards in order to make more work for the others was severely critisised at the time, for on one side there were those who considered the closing of yards to be a disaster for the town and country; and on the other side were the shipbuilders, who, lacking any Government aid, felt compelled to take some action to prevent the whole industry

being dragged down to disaster through trying to maintain far more yards than the demand warranted.

In 1935, however, the Government introduced its 'Scrap and Build' scheme, whereby loans were made available to shipowners on condition that they scrapped two tons of shipping for every new ton built under the scheme. Sunderland benefited considerably under this scheme, and from 1935 onwards there was a steady improvement in orders and a gradual crescendo of work in the shipyards right up to World War II.

As in World War I, the chief task of Wear shipbuilders was to produce merchant ships to make good the heavy losses suffered at sea and to keep open the country's vital ocean lifelines, though in addition to this, they were engaged in a good deal of Admiralty work. During the six years of the war, Sunderland launched 1,534,980 tons out of a total for Great Britain of 5,722,532 tons, a contribution of 27% of the total Merchant Ship production. "For a small river like the Wear to produce more than one quarter of the new merchant tonnage constructed in the United Kingdom under the abnormal conditions of total war is a remarkably fine performance

which it is hardly possible to overpraise."(7)

With hostilities over, the yards rapidly turned over to peacetime production again and although raw materials were short, Sunderland was able to book orders from both home and overseas. In the face of keen competition Sunderland was able to secure contracts from U.S.A., Portugal, Argentina, Norway, Sweden, Denmark, Australia, Switzerland, Egypt, Greece, Holland and Poland. Tonnage launched has increased steadily since the war, but this has not been possible without a good deal of capital expenditure and expansion on the part of the shipbuilders. Some idea of the developments in recent years is evident when one considers that in 1950 the Deptford Yard of Sir James Laing and Sons Ltd. handed over to the B.P. Tanker Co. Ltd. the 16,000-ton tanker British Reliance, which at the time was the biggest ship to be built at Sunderland. Yet at the present time (1961) J.L. Thompson & Sons Ltd. have laid the keels of two 50,000-ton tankers, being built in berths capable of accommodating vessels of up to 65,000 tons, and which can be extended to take ships of up to 100,000 tons should the demand arise.

The various types of vessels being built on the Wear

today are as follows:-

1) Oil Tankers of varying sizes from 12,000 to 65,000 tons.

2) Cargo Tramps and Liners of up to 18,000 tons.

3) Fruit Carriers of about 3,000 tons.

4) Colliers of about 2,000 to 2,500 tons.

The gradual increase in size of vessels launched on the Wear is obvious from Table 9.

"Shipbuilding, at present, has a somewhat depressing outlook, but as yet, yards are fully employed".*

The shipbuilding industry has fostered in the town the growth of a great many subsidiary and allied industries. In the times of the wooden sailing ships, Mitchell lists the following associated industries:- chain and anchor makers, coopers, block and mast makers, smiths, nail makers, sail-makers, and timber merchants. Today, the most important subsidiary industry is Marine Engineering. There are two old-established firms with marine engineering works on the river, and Sunderland's reputation for steam and diesel engines is in keeping with its high reputation in the ship-building world. The two firms are:- Doxford's who are well

* Opinion expressed by the Secretary of the Sunderland Incorporated Chamber of Commerce, Nov. 1959.

known for their opposed-piston oil engine, which is manufactured not only by them but also under licence by 25 firms in 10 other countries, and Clark's who manufacture low-powered diesel engines under licence from Sulzer Brothers Ltd. of Switzerland. Being so closely allied with the ship-building industry, these firms have experienced the same booms and slumps.

As shipbuilding is primarily an assembly industry, there are many firms in Sunderland which to a greater or lesser extent are dependent on the parent industry and supply the ships with a great variety of equipment such as: stern frames, crankshafts, generating sets, water distilling apparatus, ropes, anchors, steering gear, lifebuoys, compasses, lifeboats, propellers, and marine paint. In addition to the basic industries and their ancilliaries, there are in Sunderland several industries of a different kind. Sunder-land is regarded by many as the birthplace of the manufacture of glass in the British Isles, for it is recorded that in 674 Benedict Biscop brought skilled Frankish workers to Wear-mouth to make glass for St. Peter's Church. It is extremely unlikely that this industry has been continuously in

operation since then, but it is known that by 1817 there were seven bottle works and three glass works in the town, and that in 1818 166 tons of manufactured glass was sent abroad. Today, Sunderland is famous for its 'Pyrex' glassware made by James Jobling & Co. Ltd., who also manufacture scientific glassware and pressed glass products. They are making plans to extend their works by 24 acres. Three other firms also manufacture glass, including Hartley Wood & Co., who are noted for their antique stained glass, still processed by hand.

The location of the glass industry in Sunderland is interesting for although Sunderland is situated near to a ready source of power, there is no local source of the other raw materials such as silica and borax. Neither has there been an immigration of foreign refugees such as at Stourbridge. The reason appears to lie in the fact that the foreign coal export trade necessitated the return of the colliers in ballast. In the days of wooden ships it was not possible to use water ballast and so the colliers returned to Sunderland loaded with sand and flints etc. Even today silver sand is regularly imported from Rotterdam for use in the glass works.

It was for very much the same reason that the pottery industry was established in Sunderland. At the height of its prosperity the industry employed about three thousand people in the local potteries, and ships were regularly engaged to carry the finished articles to London and other parts of the British Isles. Mitchell states that 300,000 articles of pottery were sent abroad annually from the Wear, chiefly to Norway, Denmark, Prussia and Holland. However, competition from both home and overseas manufacturers has been responsible for a decline in this industry. There have been no exports of earthenware from Sunderland since 1900 and there is now only one small Pottery and one firm manufacturing fireclay and stoneware goods.

Two other industries which rely on imported raw materials are those of paper and rope manufacture. The Hendon Paper Works founded in 1872 was one of the first mills to make paper from esparto grass, of which about 14,000 tons are imported annually from Africa. Another foreign raw material is wood pulp and supplies of this are obtained from Finland, Sweden, and occasionally from British Columbia. It is hardly surprising to find rope manufacturers in a shipbuilding

town, and in Sunderland there are two such firms. They both now specialise on producing wire ropes for a wide variety of purposes, but sisal is still imported from East Africa for fibre ropes, binder twine and cordage.

Sunderland has a long record as a fishing port, but as the general port facilities have been developed, the fish market has had to be moved to fresh quarters from time to time. These moves, and the incidence of two World Wars, have tended to hinder the progress of the fishing industry at Sunderland in modern times, with the result that the trade is now concentrated on the Tyne. However, a modern Fish Quay and Market has now been set up, and it is hoped that the fleets will start using Sunderland once again.

The most recent large-scale development in the industrial activities of Sunderland has been the establishment of a Trading Estate at Pallion. This came about as a result of the Depression in the 1930's when many of Sunderland's workers were unemployed. It has been estimated that about one in four of the town's insured population is linked in one way or another with shipbuilding, and the establishment of this Estate was an effort to try and

diversify the industrial make-up of Sunderland by introducing a number of light industries less liable to suffer from the booms and slumps which so grievously affect the shipbuilding industry.

The first factory was established on the Estate in 1938 and by the beginning of the war, three firms were employing 325 people. Since the war further progress has been made and the industries now present cover a wide range of products: furniture, glass, scientific instruments, cathode ray tubes, aero-engine parts, telephone equipment, clothing, office equipment, industrial gases and engineering products. The industries on the Estate now employ about 6,500 workers of whom 2,800 are men. The fact remains, however, that a very large proportion of the male workers in Sunderland are still dependent upon the shipbuilding industry and are subject to the booms and slumps that are characteristic of that industry.

Chapter 7.

SUNDERLAND'S TRADE.

In the same way as shipbuilding dominates Sunderland's industrial scene, so coal dominates the trading activities of the port. Records of coal shipments do not go back before the seventeenth century, but it is known that as early as 1396 coal from Sunderland was sold to the Abbot of Whitby at three shillings and four pence per chaldron (about 18 cwts. at that time). For a long time the coal trade remained small, mainly because of the difficulties of transporting the coal from the exposed coalfield to a navigable river but also because there were still ample supplies of timber for use as charcoal. Gradually, however, timber became exhausted, new transport techniques were evolved, and new mining methods opened up the concealed coalfield. These changes brought about an increase in the coal trade for which Sunderland was a very suitable outlet.

According to the historians, Sunderland became a place of considerable importance during the Civil Wars. This was due, "not so much from its positive importance, as from the circumstance that Newcastle, from 1642 to 1644, was stoutly and

loyally defended for the king, and in consequence the export of coal from Newcastle was closed against the rebellious city of London. Under these circumstances, the collieries on the Wear, and the port of Sunderland, became of vital importance to the Parliamentary party"[2] and it is generally supposed that the export of coal was greatly increased for this reason. However, Nef[8] suggests that rapid increase in the volume of coal shipments came after the Civil War: the coastwise tonnage was almost doubled in 1658.

During the remainder of the seventeenth, and the whole of the eighteenth centuries, the coal trade gradually increased (see Fig.17), whilst the port at Sunderland was progressively improved, and during the early part of the nineteenth century the coal trade reached considerable dimensions. The figures available showing overseas shipment fluctuate considerably and demonstrate the effects of the Napoleonic wars very accurately.

During the whole of this time the coal was brought to the banks of the upper reaches of the river and loaded into keels - flat-bottomed craft carrying about 21 tons - which brought it down to the lower harbour, where it was transferred by manual labour into the colliers. In 1820, 1,115,812 tons

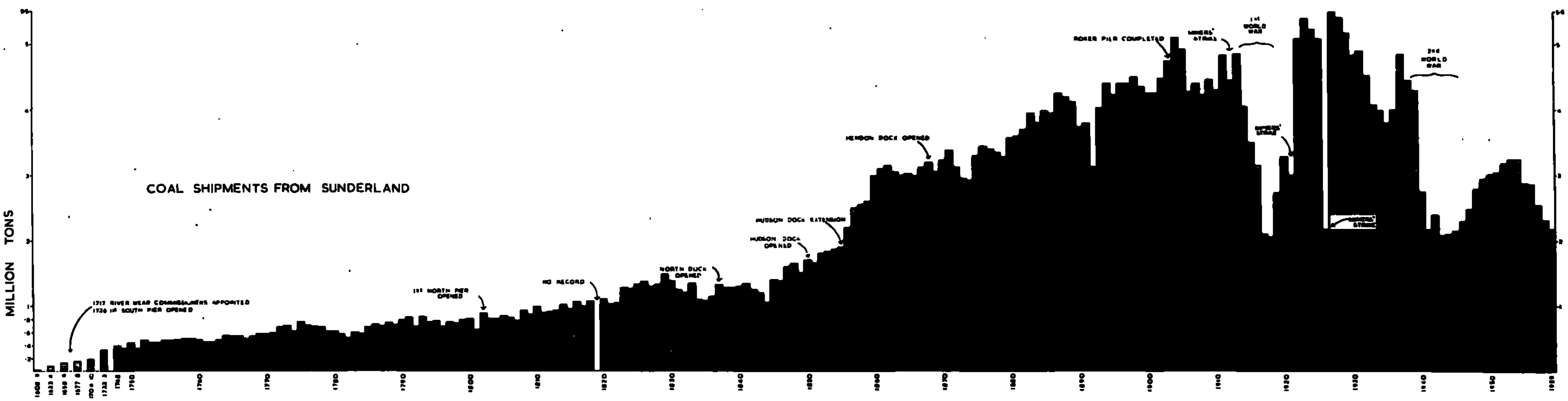

COAL SHIPMENTS FROM SUNDERLAND
MILLION TONS
1717 RIVER WEAR COMMISSIONERS APPOINTED
1726 1st SOUTH PIER OPENED
1st NORTH PIER OPENED
NO RECORD
NORTH DOCK OPENED
HUDSON DOCK OPENED
HUDSON DOCK EXTENSION
HENDON DOCK OPENED
ROKER PIER COMPLETED
MINERS' STRIKE
1st WORLD WAR
2nd WORLD WAR

Fig. I7.

of coal representing 47,225 keel loads and the cargoes of nearly 7,500 vessels, were shipped in this way. But times were changing, and in 1836 the Durham and Sunderland Railway was opened, coal staiths were built, and spouts erected for shipping the coal direct into the colliers. Whereas in 1809 there had been 570 keels plying on the river, by 1851 they were practically extinct.

In a remarkably short space of time the railways opened up the inland coal areas to the coastal ports; and the ports soon found themselves inadequate to deal with the great increase in the coal trade. In 1837, the North Dock was opened to accommodate some of the increased traffic, but this was not at all adequate, and in 1850 the South Docks were added. "But railway transport, which brought its prosperity both to the coalfield and the ports, nearly brought with it a serious set-back. With the development of the railway system, big coal-consuming centres in the south, which had relied upon the sailing ship to bring their coal from the Tyne, Wear, and Tees, began to look to the nearer coalfields in the Midlands which the railways had made accessible to them; the sailing ship could not compete with the steam

train for speed or regularity of service. And then in 1852 the Tyne invented the steam screw collier, the 'John Bowes', giving an immense impetus to the shipbuilding industry, and replacing the sailing ship, and making possible the rapid and economical distribution of coal by sea".(9) Although, as suggested above, it was the 'John Bowes' which pioneered this new method of transportation, the first screw collier to be used in the London coal trade was 'The Experiment' launched at Sunderland in 1845. An inquiry made in 1922 showed that rail freight formed one-half of the total cost of distribution of Derbyshire coal to a London consumer, whereas sea freight formed only one-quarter of the distribution costs of north-eastern coal to a Southhampton consumer.(10)

Thus the railway and the steam-screw collier brought the means by which the industrial revolutions' demand for coal could be satisfied, and as a result the coal trade from Sunderland continued to increase. By 1856 two million tons of coal were being shipped annually, by 1861 three million tons, and in 1887 four million tons. The first five million ton annual total was reached in 1904. As a result of industrial depression and a miners' strike, the total fell back

to about 4½ million tons per annum, and declined still further during the First World War when overseas shipment was stopped and coastwise traffic hampered. In 1918 the total fell to as low as 2 million tons. Post-war recovery was delayed by a miners' strike in 1921, but from 1922 the total each year was about 5 million tons, except for 1926 when a miners' strike again reduced the total to about 2 million tons. During the 'thirties coal shipments were affected by the economic depression and a consequently reduced demand, and the Second World War again seriously affected trade, particularly overseas trade. At the present time the overseas coal trade is virtually non-existent, and is not likely to be of any great importance in the future. The main reasons for the decline are two in number:-

1) The substitution of other means of producing power - fuel oil, petrol, and hydro-electricity. Of great importance in this respect has been the change over from coal to oil as a means of bunkering ships.

2) Markets formerly supplied with coal from Britain have found cheaper and more reliable sources in other countries. "Intense competition from coalfields abroad, particularly

from those of the Ruhr and Upper Silesia, was responsible for the fall in export price-levels. The labour costs of production per ton of coal during the inter-war period were considerably lower in Polish Upper Silesia and somewhat lower in the Ruhr than in British exporting districts, output per man-shift being substantially higher in each field than in Great Britain and wage-rates in Polland being substantially lower in addition."(11)

Since the Second World War, coal shipments have only rarely exceeded 3 million tons per annum, and at the present time are gradually declining to about 2 million tons. The state of the coal industry has fluctuated considerably during the last fifteen years, ranging from a time when fuel was extremely short (and imports of coal from the U.S.A. were actually unloaded at Sunderland) to the present time when demand for coal is so low that large stocks have accumulated. In spite of these fluctuations, the coal trade remains the staple trade of the port.

Exports other than coal have never been very extensive. In the past, lime, earthenware, glass, and iron goods have been the most important (see Table 13. for a list of exports

from the port in 1854), but Newcastle and the Tyne ports usually capture all the export trade, with the exception of goods actually produced in Sunderland. Table 15 shows that the range of goods exported through the port has gradually declined and many items have now disappeared entirely from the export list. The two most important at the present time are Machinery - which is mostly in the form of marine engines produced locally in the marine engine works, and Petroleum and Benzole - but this is due almost entirely to bunkering facilities provided by the port. The export of crushed limestone has become important during the last few years.

Imports into Sunderland have been in the past, and still are, more varied than the exports. In the eighteenth century (see Tables 10 and 11) the imports were mainly timber and wine, both originating from Europe. The timber was used not only as pit-props, but also for the building of wooden ships. In 1857 Fordyce speaks of the imports into Sunderland as chiefly corn, flour, wine, spiritous liquors, timbers, tar, deals, and flax. Today, Sunderland still imports timber and pit-props, though the use of timer pit-props is

decreasing and much of the trade passes through the Hartlepools. Sunderland imports considerable quantities of timber, however, mainly from Sweden, Finland, Austria, Czechoslovakia, Canada and Brazil. Most of this is used locally in the furniture and shipbuilding industries. Grain was imported until as recently as 1953, but nowadays most of the grain is imported via the Tyne where there are large warehouses, and where the railway network is more suitable to serve the north-east generally.

A serious loss to the trade of the port has been the cessation of iron ore imports for the Consett Iron Company. The trade had reached considerable dimensions when the Company decided to do their importing via the Tyne, where a very large installation was provided to deal with the ore. Imports of iron and steel scrap, mainly from the U.S.A., have become important since the Second World War, but this trade fluctuates considerably according to the demands of heavy industry. Two commodities which, rather ironically, have been imported through the port recently are coal and iron and steel ingots, both coming mainly from the U.S.A.

The most important single item in the import trade is

Petroleum; some of this is, of course, re-exported in the form of bunkers, but seven oil companies* now have direct pipelines connections with the port's oil berths, and with more developments planned by other companies the prospects for this trade are good.

In addition to petroleum products the main items in the General Cargoe import trade are:- cement from coastwise ports; sisal from East Africa for use in the local rope-making industry; wood pulp from Canada, Finland, Sweden and Norway for use in the local paper mills; esparto grass from North Africa also for use in local paper mills; silver sand from Holland, moler earth from Denmark and Kieselguhr from North Africa, all for use in the local glass industries; and china clay, timber and pitwood, pyrites cinders, sugar, chrome ore and hemp.

In the cargo-liner trade, vessels from Gothenburg make calls at Sunderland, bringing timber and general cargo, and those engaged in the short-sea service from Rotterdam regularly call with cargoes of silver sand and other commodities.

* The seven oil companies concerned are:-
Cleveland Petroleum Co. Ltd., Esso Petroleum Co. Ltd., Major & Co. Ltd., Mobil Oil Ltd., National Benzole Co. Ltd.,

Petrofina Ltd. and Regent Oil Co. Ltd.

Liners in the East African Homeward Conferences Service load at their regular East African ports for direct shipment to Sunderland. Vessels at present operating the service are those of the British India and Union Castle Lines, their main cargo for Sunderland being sisal.*

The import trade is thus many sided and is about six times as great as the export trade (excluding coal), though many of the imports are of special commodities for use in local industries. Most of the region's general cargo trade is carried on by Newcastle and the Tyneside ports which have special connections with the Scandinavian countries. In addition to this, Newcastle has a much wider industrial and commercial hinterland than does Sunderland.

* Before the 1939-45 war, the undermentioned cargo liner services were available at Sunderland:-

From:	London	Weekly.	Tyne-Tees Steam Shipping Co. Limited.
	Helsinki, Kotka.	Monthly.	Finland Line.
	Gothenburg.	Fortnightly.	Swedish Lloyd Line.
	Rotterdam.	Weekly.	Home Line Limited.
	Amsterdam.	Fortnightly.	Tyne-Tees Steam Shipping Co. Limited.
	Antwerp.	Intermittent.	Tyne-Tees Steam Shipping Co. Limited.

SUNDERLAND'S SPHERE OF INFLUENCE.

Chapter 8.

"Town and surrounding region are inseparable both geographically and socially. They are mutually interdependent, and never more so than today. Modern communications have enabled town and city greatly to extend the range of their services, and at the same time have afforded the surrounding population more direct and immediate contacts with urban life and institutions."(12) "Urban centres act as collecting and marketing points for the products of their surrounding territories, and as distributing centres for goods outside; as centres for provision of educational, health, recreational, and cultural services; and as crystallising points of local and regional feeling and thought, as well as transmitters and disseminators of external influences."(13) These two quotations sum up what is understood by the term 'sphere of influence'.

In an effort to determine the extent to which Sunderland 'influences' the surrounding area, certain criteria have been taken, and their range of influence plotted on a map (Fig.18). As can be seen, three of these criteria are virtually

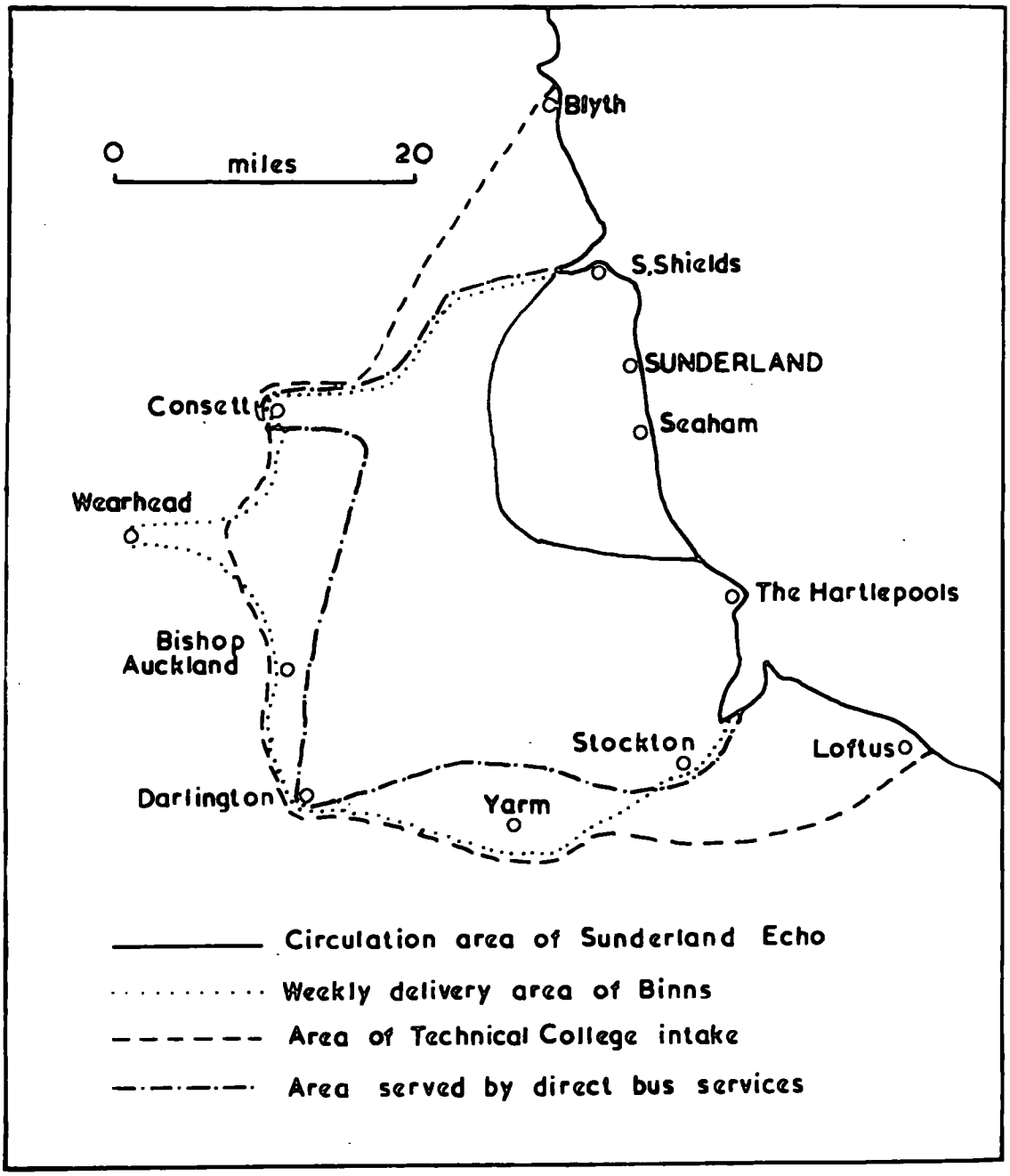


Fig. I8. Map showing selected criteria delimitating Sunderland's Sphere of Influence.

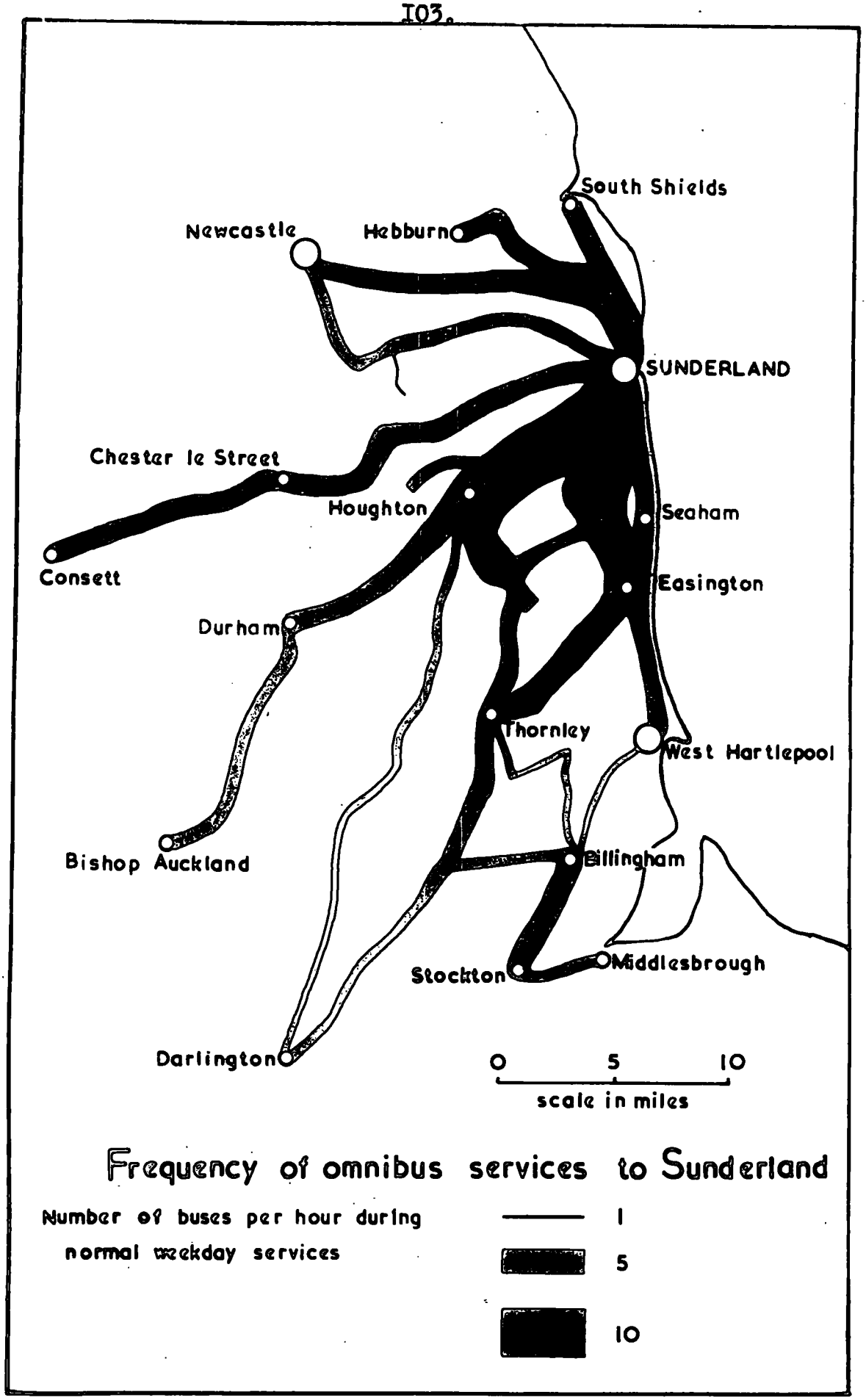

South Shields
Newcastle
Hebburn
SUNDERLAND
Chester le Street
Houghton
Seaham
Consett
Easington
Durham
Thornley
West Hartlepool
Bishop Auckland
Billingham
Middlesbrough
Stockton
Darlington
0 5 10
scale in miles
Frequency of omnibus services to Sunderland
Number of buses per hour during normal weekday services
1
5
10

Fig. 19.

restricted to County Durham, but the fourth, that of the Technical College intake,* extends outside County Durham to Blyth in the north and Loftus in the south. This is probably because the students only travel to Sunderland in order to study a particular subject which colleges nearer to their home town do not offer, for example, Naval Architecture and Marine Engineering. Sunderland Technical College is by no means the only Technical College within the area shown on the map.

The circulation of the Sunderland Echo is limited to an area of about 15 miles radius from Sunderland and is in strong competition with other evening newspapers from West Hartlepool, Darlington and Newcastle. It is significant that the Newcastle evening paper is sold side-by-side with the local paper in Sunderland itself.

It has been impossible to determine exactly the area which Sunderland serves as a shopping centre, mainly because there is considerable overlap of spheres of influence and shoppers in many parts of County Durham have a choice of several large shopping centres and frequently do not confine

* Only those students who travel daily to Sunderland have been taken into consideration.

their attention to one centre only. The 'bus frequency map (Fig.19) indicates the area from which shoppers may travel by direct service to Sunderland; but in the main, most of them come from an area of fifteen miles radius, which corresponds roughly to the Sunderland Echo circulation area. In this connection, it is again significant that many people travel through Sunderland on their way to shop in Newcastle.

Sunderland, therefore, appears to have an inner and an outer sphere of influence; the former limited to about fifteen miles radius, and the latter to County Durham and the towns just outside the County, such as Middlesbrough and Newcastle. The town itself, together with all the other towns in the North-East, is in the wider urban field of Newcastle, the regional capital and major recreational and cultural centre. It has already been pointed out in a previous chapter that Newcastle is the major collecting and marketing point for the products of this region as it is also the major distributing centre for imported goods.

Regarded solely as a distributing centre for certain kinds of glassware, however, Sunderland has a field which extends to all parts of the British Isles; and as far as ships and marine engines are concerned its influence is world-wide.

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PART FOUR.

THE HARTLEPOOLS.

Chapter 9. Site and Settlement.

Hartlepool is situated on a peninsula some four miles north of the broad mouth of the River Tees. The key to this site is revealed by the Geology map(Fig.20), which shows that there is here an outlier of Magnesian Limestone rising to nearly 50 feet in height. The headland, or Heugh as it is called, is joined to the mainland by a neck of blown sand and alluvium, only some 500 yards across at its narrowest point. It thus forms a perfect example of a tombolo.

It has been suggested that a pre-glacial river once flowed between the outlier of Magnesian Limestone and the mainland, but there is no definite proof of this, though a plan of 1639 does show that at that time the neck of dry land was not more than 60 yards across at its narrowest point.

Immediately west of the Heugh is a low-lying mud-flat known as the Slake which forms a natural harbour in the lee of the peninsula. It was this Slake that was utilized in the 1850's for the site of the dock system, and consequently

only a little of it remains in its natural state. It seems probable that this Slake represents what once was a large mass of anhydrite which has subsequently been dissolved and inundated by the sea.

The relatively new town of West Hartlepool was built around the village of Stranton which was situated to the south-west of the Slake. The site of this settlement was on the northern side of a small stream(at present occupied by Burn Road and Burn Valley Gardens) and was said to consist of "sand banks, mossy swamps and agricultural fields."(I) In contrast to Hartlepool, the site had nothing in particular to recommend it except for the fact that it was adjacent to the Slake and thus suitable for development as a port.

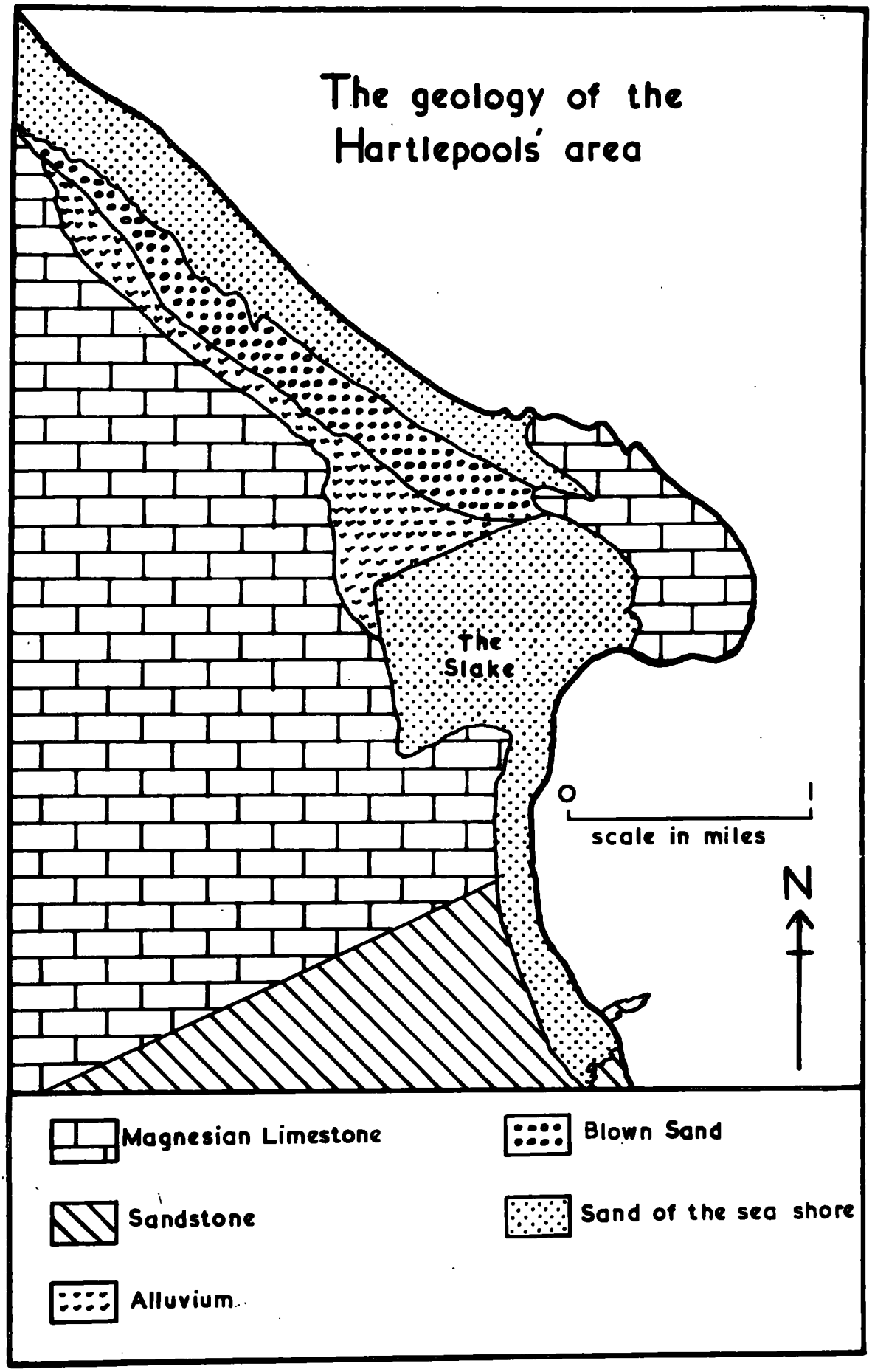

The geology of the Hartlepools' area
The Slake
0
1
scale in miles
N
Magnesian Limestone
Blown Sand
Sandstone
Sand of the sea shore
Alluvium

Fig. 20.

Settlement at Hartlepool was first mentioned by the Venerable Bede who describes the foundation there of a double religious house in 640 A.D.. In common with Whitby Abbey and Lindisfarne, the site chosen was a barren, windswept height, typical of the foundations by means of which Christianity was spread from Iona. Under the protection of the Hartlepool Monastery a small fishing village became established on the sheltered south-west shore of the peninsula.

Disaster came in 800 A.D. when a Danish fleet raided the peninsula and destroyed the Monastery. According to some authorities the settlement was rebuilt between 830 and 845 by Egfrid, Bishop of Lindisfarne; but, according to others, it was not redeveloped until the Danes entered County Durham at the end of the ninth century. However, by the time the Normans came it was described as the best haven between the Tyne and Humber; its important situation was obvious to them. The landing of 540 Flemish knights and men-at-arms in support of a rebellious rising by the Scottish king, William the Lion, in 1174, gives some indication of the importance of Hartlepool as a port at that time. "It was a place capable of receiving ships and troops from the continent on every

emergency, when the northern borders were troubled, and thence the family of Brus were induced to make it a place of strength."(2) Robert Brus "builded the haven and wall about the town of Hartlepool, with ten towers on eche syde of the haven, and a chayne to be drawn between them near the haven, which haven would hold a C. sayle."(2) Lavish gifts enabled the Bishops of Durham to acquire Palatine powers over most of the County, which in many respects became an independent state. Hartlepool* was more convenient as a port than the silted-up river estuaries, and so it was that it became the leading port of County Durham. The development of its port facilities was extensively subsidised by the Prince Bishops, and it soon came to have a virtual monopoly of the trade of the Palatinate. "Hartlepool became annexed to the See of Durham in II89, and became the grand emporium of the diocese, whence the prelates sent forth their fleets, imported merchandise, and landed auxiliary forces."(3)

* Hartlepool is not mentioned in the Boldon Book(II80) as at that time the land still belonged to the Brus family.

The small town grew and prospered throughout the twelfth century. In the thirteenth century, trade began to be stabilized and the small, but growing class of prosperous merchants set out to establish their position. A Charter of Incorporation was acquired for thirty marks from King John in I200 which did more to consolidate local commerce and prestige than anything else. At various times during the twelfth and thirteenth centuries the town obtained the right to appoint a mayor(I230) and hold a weekly market(II9I). Hartlepool gradually became the most valuable township in the Palatinate, with the possible exception of Durham itself, and this position was maintained until the Reformation.

By the sixteenth century, however, a measure of national law and order diminished its strategic importance, and during the Reformation the powers of the Prince-Bishop of Durham were curtailed, so that the Palatinate lost a good deal of its economic independence. The result was that much of Hartlepool's trade began to find its way into the more convenient river-ports of Yarm, Stockton, Gateshead and Sunderland. So began a period of decline which

witnessed a loss both of trade and population.

Hartlepool so diminished in importance, that by I680 it had become a dependent port of Stockton; and from I725 to I832 the commercial condition of Hartlepool declined to that of a small fishing village.* As an indication of this decline, there is an interesting record of I808, when "a grant of the harbour was unfortunately made to an individual.....who immediately enclosed it for the purpose of agriculture."(4) A crop of corn was grown upon the dry Slake, but it reverted to its original use in I8I3.

This period of decline and stagnation lasted for about three centuries, and the situation was only remedied after the opening of the Stockton and Darlington Railway in I825. This event had important repercussions for Hartlepool as it had for a great many other places in County Durham and elsewhere. The success of this first railway was such, that during the next ten years a network of coal railways spread across the County, and so made possible the easy transport of coal to the coast for shipment. "At that

*During the same period, the population of Sunderland increased by about 20,000.

time Hartlepool presented the most dreary and desolate prospect that can well be imagined. It had no commerce, no trade and no manufacture."(5) The picture was soon to be transformed however.

Owing to the enterprise of Christopher Tennant, a railway was constructed from the coalfield to Hartlepool in I832, the object being to obtain the shipment of coals from the Thornley, Haswell, and South Hetton collieries. The old haven at Hartlepool was quickly converted into a coal-dock and equipped with coal-ramps. After many early setbacks, and in spite of the great cost of the works, the project proved highly successful, chiefly because in contrast to the river-ports, it was directly accessible from deep water and did not suffer from silting. Within 20 years, the town had increased considerably in size, the population having increased by over 700%.*

The fortunes of Hartlepool were thus revived and its success was such that it led to the settlement and growth of what was to become its much larger neighbour, namely,

* A more detailed account of population changes will be found in the next chapter.

West Hartlepool. The first step responsible for the establishment of this new town was taken in I834, when a railway was built from the coal-field to Port Clarence on the north bank of the Tees. This line met with only moderate suceess mainly because of the silted condition of the river at this point; and so in I838, Christopher Tennant's financial interest in local railways led him to promote an extension of the Port Clarence line to the successful and silt-free Hartlepool docks. This new line became known as the Union Railway, but because it had no control over either the Port Clarence Railway or the Hartlepool docks, its traffic was meagre and its profits non-existent. In order to save the Union Railway, its wealthy solicitor, Ralph Ward Jackson, promoted another company to build a separate harbour and dock for the sole use of the Union Line, south-west of Hartlepool and making use of the existing Slake. Thus it was that West Hartlepool became established.

The new town was built around the nucleus of Stranton village, and the growth of this new settlement can only be described as phenomenal. In I585 there were some ten

cottages clustered round the church; in I8I2 there were only some 50 dwellings and the population numbered 350. The village possessed "two flour mills, each having a vessel to convey the flour to Newcastle and Sunderland."(I) In I846 a hundred houses had been built, and a year later Jackson's new docks were opened. "Speakers at public functions frequently referred to the port as the future Liverpool of the North East Coast. At that time there was reason for unbounded optimism.....It was then, and for long afterwards, known as West Dock, and was looked upon by Hartlepool with that patronizing toleration with which age is apt to regard youth."(6) The Parliamentary Gazetteer of I854 speaks of the harbour and docks at the Hartlepools as "the most accessible and convenient upon the whole long line of coast between the Straits of Dover and the Pentland Firth."

In I850 an event took place which was second only to the development of steam locomotion in its effects on the economy of the Hartlepools; ironstone seams were opened up in the Cleveland Hills, only I5 miles to the south of the Hartlepools. The presence in the area of coal

and limestone had already been sufficient to establish a small-scale iron industry, but the discovery of iron ore in the area too was responsible for a considerable growth of the industry, and within five years of the discovery, some 35 blast furnaces were operating on Tees-side. This made possible the successful development of the metal industries and iron shipbuilding in the Hartlepools, and was thus responsible for the continuing rapid growth of West Hartlepool after the opening of the docks.

By I865 the whole dock system of the two towns had passed into the hands of the North-Eastern Railway Company, and the period of fearless speculation and almost dictatorial powers of Ward Jackson in the town of his creation came to an end. A Charter of Incorporation was acquired by West Hartlepool in I887 and efforts were made to amalgamate the two towns, but these, and subsequent efforts, all failed.

In the interwar period, the economy, trade, and population of the Hartlepools all suffered as a result mainly of the Depression, but these and more recent changes will be reviewed in the following chapters.

In spite of the very different factors responsible

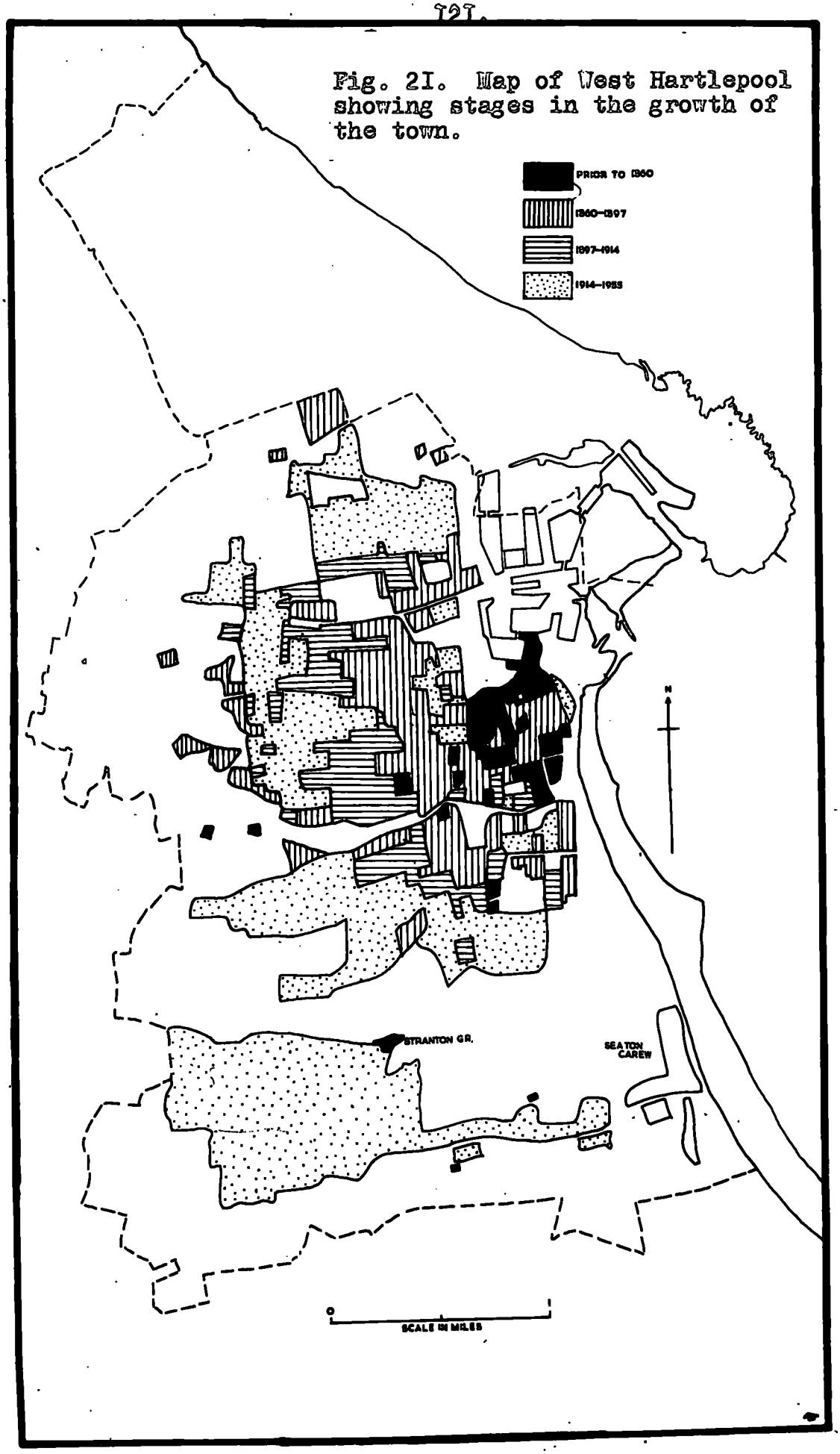
for the settlement of these two towns, the growth of both has followed an essentially linear form. In the case of Hartlepool, it started as a very small settlement in the lee of the peninsula and subsequent growth has only been possible in one direction; that is, along the spine of the peninsula towards the north-west. West Hartlepool was laid out under the guidance of Ralph Ward Jackson and followed a monotonously rigid grid-iron plan that completely obliterated the small village of Stranton. Stranton Green is now only remembered by name. Subsequent growth was essentially linear in that it grew at first along the north-south railway. In recent years, however, the pull of Tees-side and particularly of the Imperial Chemical Industries at Billingham, has caused development towards the south and south-west(Fig. 2I.).

Reference to the Urban Land Use map(Fig.22) will show that the whole of the eastern seaboard, from the docks in the north to Seaton Carew in the south, is taken up by industrial users. The problem of space for industrial expansion is not as severe here as it is in Sunderland. Indeed, in the Hartlepools there is a surplus of land

suitable for industry. It remains true, however, that the docks are too small for present-day ships, and this has hampered development in several ways as will be shown in subsequent chapters.

"The port of the Hartlepools is one of the many terminal facilities still laid out for double the trade carried by ships half the size."(7)

Fig. 2I. Map of West Hartlepool showing stages in the growth of the town.



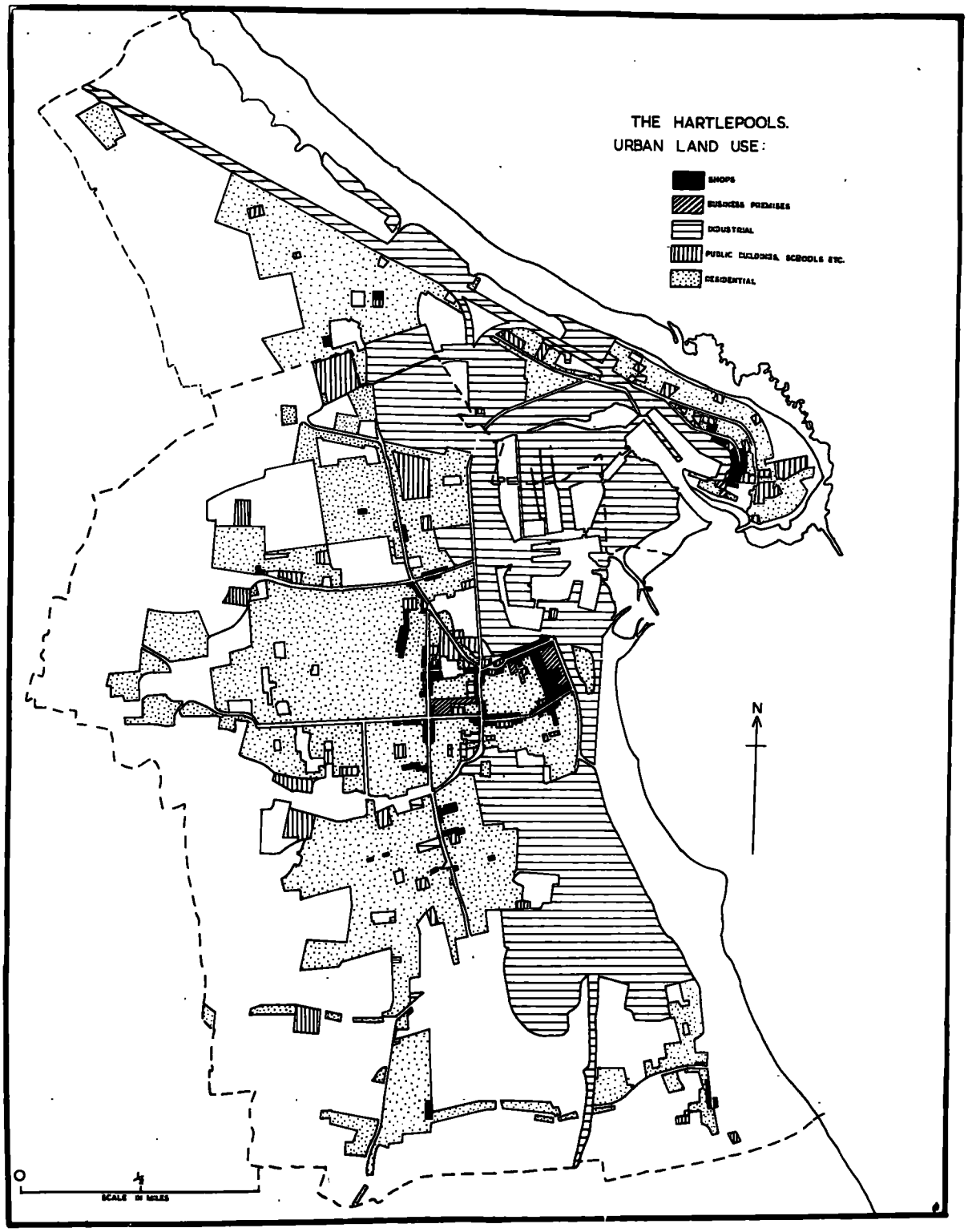

THE HARTLEPOOLS.
URBAN LAND USE:
SHOPS
BUSINESS PREMISES
INDUSTRIAL
PUBLIC BUILDINGS, SCHOOLS ETC.
RESIDENTIAL
N
0
4
SCALE IN MILES

Fig. 22.

Plate IV.

The Peninsula at Hartlepool.

The photograph illustrates the tombolo formation of the peninsula with the Church of St. Hilda situated on the top of the Heugh. The railway line that brings coal from the South Durham Coalfield is clearly visible with the Magnesite Works situated between it and the sea. The railway terminates at the Coaling Staiths built out into the Slake - a part of which can be seen in its unaltered state behind the staiths.

I24.

Plate V.

The Docks at Hartlepool.

In the background is the peninsula with Victoria Dock and the Fish Quay in its lee. In front of the Coaling Staiths is the Old Harbour. In the centre of the photograph are the shipbuilding yards of Messrs. W. Gray & Co. Ltd. where as can be seen the ships are launched direct into the Central Dock. Behind the yards are the Central Marine Engine Works and nearer the harbour entrance are the Engine Works of Messrs. Richardson, Westgarth & Co. Ltd. In the foreground are Timber Ponds and Timber Storage Yards. The Slake can be seen at the left of the photograph.

Plate VI.

The Docks at West Hartlepool.

At the top-right of the photograph is the low-lying and sandy entrance to the River Tees. Two small outliers of Magnesian Limestone can just be seen in the bay. The entrance to the West Harbour is in the centre and this leads through into the Union, Jackson and Swainson Docks. The South Coal Staiths can be seen here and also the two large warehouses designed specifically for grain imports. In front of these are shipbuilding and repairing yards of Messrs. W. Gray & Co. Ltd. The railway wagons loaded with timber are a notable feature. In the foreground, to the right of the gasometers, is the site of the Trading Estate, though only a few factories are shown on this photograph.

Chapter 10. Population.

At the time of the first census in 1801, Hartlepool was a small fishing village with a population of less than 1,000. Its fortunes had declined considerably since the days of the Palatinate; it had no commerce, no trade and no manufacture. This period of stagnation continued until 1832, when the opening of the railway brought the coal trade to the port, and with it an increase in population. Between 1831 and 1841 the population increased from 1,330 to 5,236 - an increase of 294%. Thereafter the population increased steadily until in 1901 it reached a total of 22,590 (See Figs.23 and 24).

Meanwhile, the new town of West Hartlepool had been established and grew at an even faster rate than Hartlepool. In 1801 the population of Stranton (the parent village of West Hartlepool) was 610, and by 1831 it had increased by only 126. But here, as in the case of Hartlepool, the coming of the railway and the opening up of the coalfield brought with them a great increase in population. The extension of the Union Railway and the opening of the new docks in 1838 had an immediate effect on the population, which by 1841 numbered 2,106, and by 1851, 4,769. The opening up of the Cleveland iron field and the subsequent establishment of iron industries

and shipbuilding in West Hartlepool were responsible for a spectacular increase in population which grew by 183% in ten years: from 4,769 in 1851 to 14,515 in 1861. Thereafter, growth was appreciably slower, the total reaching 63,756 in 1901.

In 1907, however, the period of great population increase came to an end, and not for the last time, the Hartlepools experienced the effect of a depression. The result of this is reflected in the population graphs (Figs. 23 and 26) which show that in the ten years from 1901 to 1911 the population of West Hartlepool increased by only 167 (.2%) whilst that of Hartlepool actually decreased by 1975 - a loss of 8.7% on the 1901 population. The effect of the depression on population was probably greater than the figures reveal, because the years immediately prior to 1907 were years of boom and expansion, and it is reasonable to assume that the population had increased considerably above 1901 figures.

The next few years were a time of industrial expansion which carried on into the war years and continued after the war until 1920, and in spite of population loss through enemy

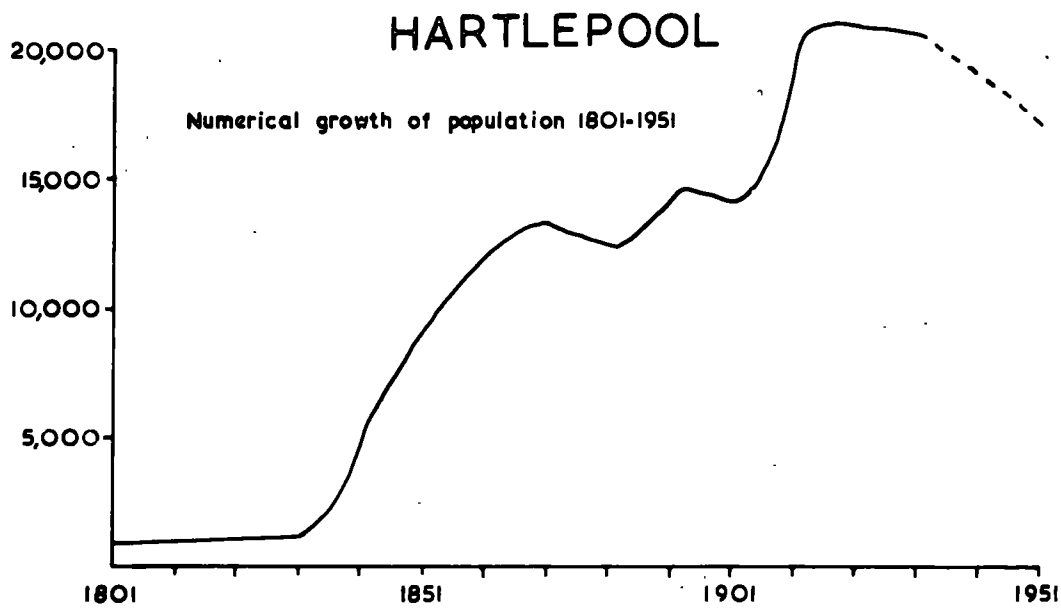
action at sea, in countries overseas, and in the Hartlepools themselves, the population again shows an increase, though by no means as great as in the nineteenth century.

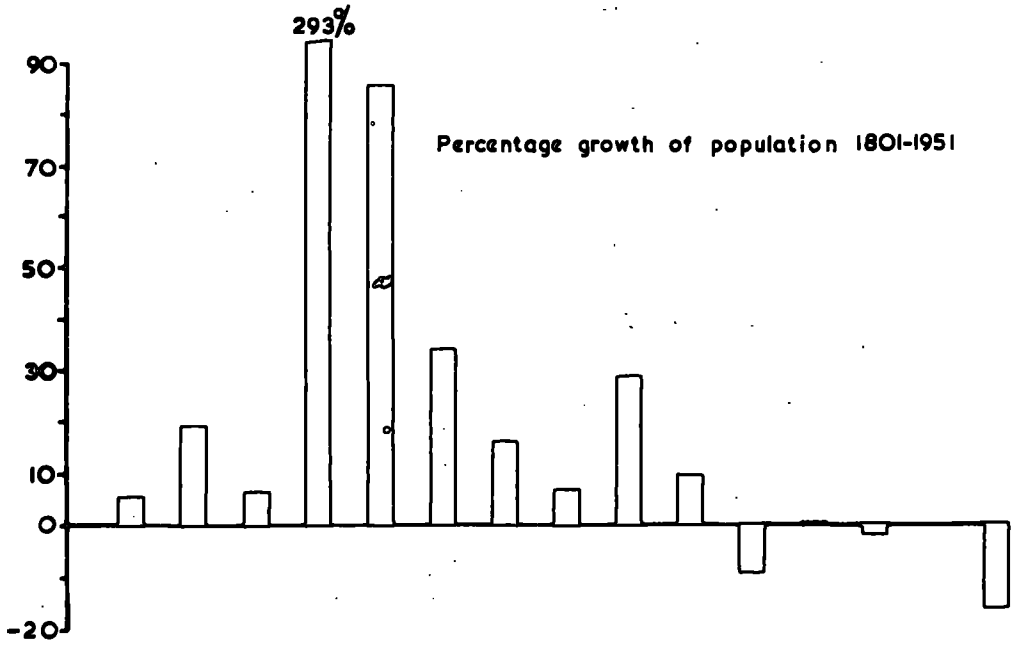
But the twenties and early part of the thirties were again a time of depression; part of the trade slump which hit the world as a reaction from the boom which followed the end of the war. The Hartlepools suffered consistently high unemployment and less than held its own in comparison with other industrial centres in the area. In 1932, when the figures for national unemployment reached 23%, that in the Hartlepools rose to 52%. These figures tell their own tragic tale, and as a result the Hartlepools lost over 17,500 persons, or 19% of its 1921 population, by emigration between 1921 and 1939.

Because of the absence of a census in 1941, it is rather difficult to ascertain how far the Hartlepools have recovered from the effects of the depression. In 1951 the population of Hartlepool was 17,219 - still 16% less than the 1931 population; and the population of West Hartlepool was 72,662 - an increase of 6% over the 1931 population.

The industrial structure of the Hartlepools is indicated in Figs. 27 and 28[8]. In a total working population

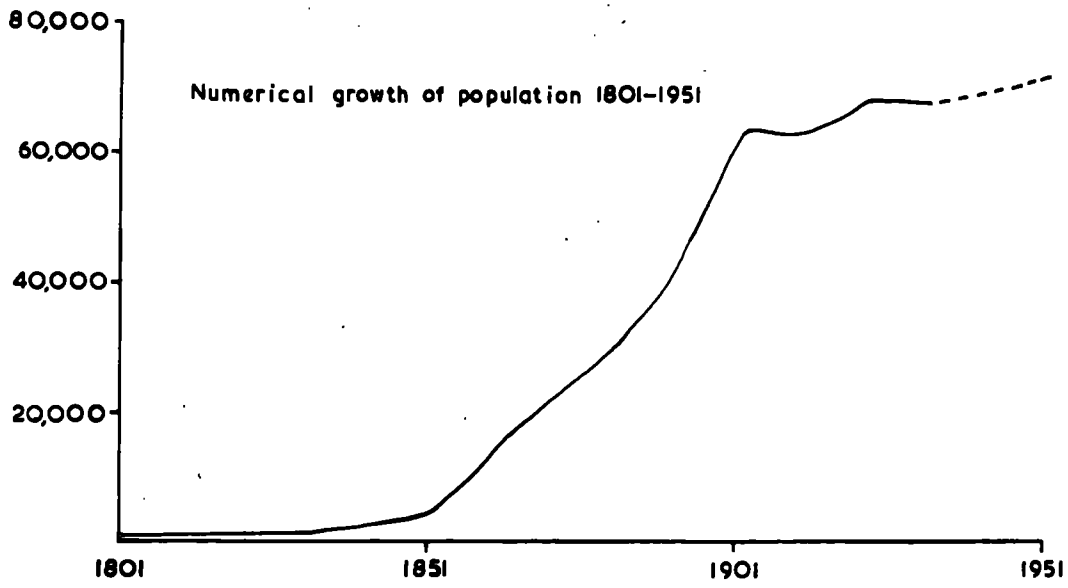
of 37,400 30% are employed in shipbuilding and allied industries, a proportion which gains greater significance when it is realised that this represents 63% of all those employed in the Extractive or Manufacturing Industries. Thus, in spite of the fact that several new light industries have been attracted to the area, a large proportion of the population are still employed in the heavy industries; and therefore the area is still very vulnerable if a depression should once again occur.

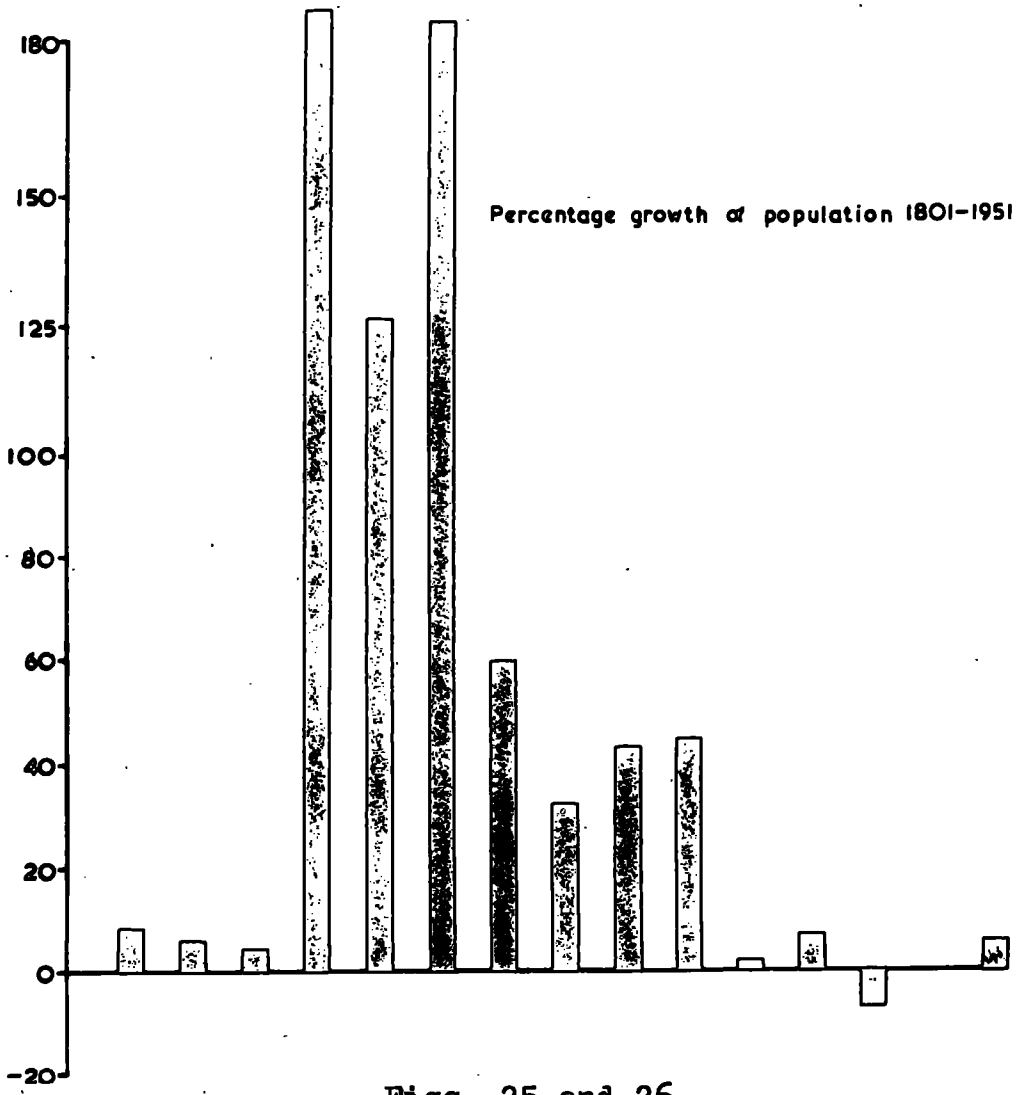




Figs. 23 and 24.

WEST HARTLEPOOL





Figs. 25 and 26.

THE HARTLEPOOLS

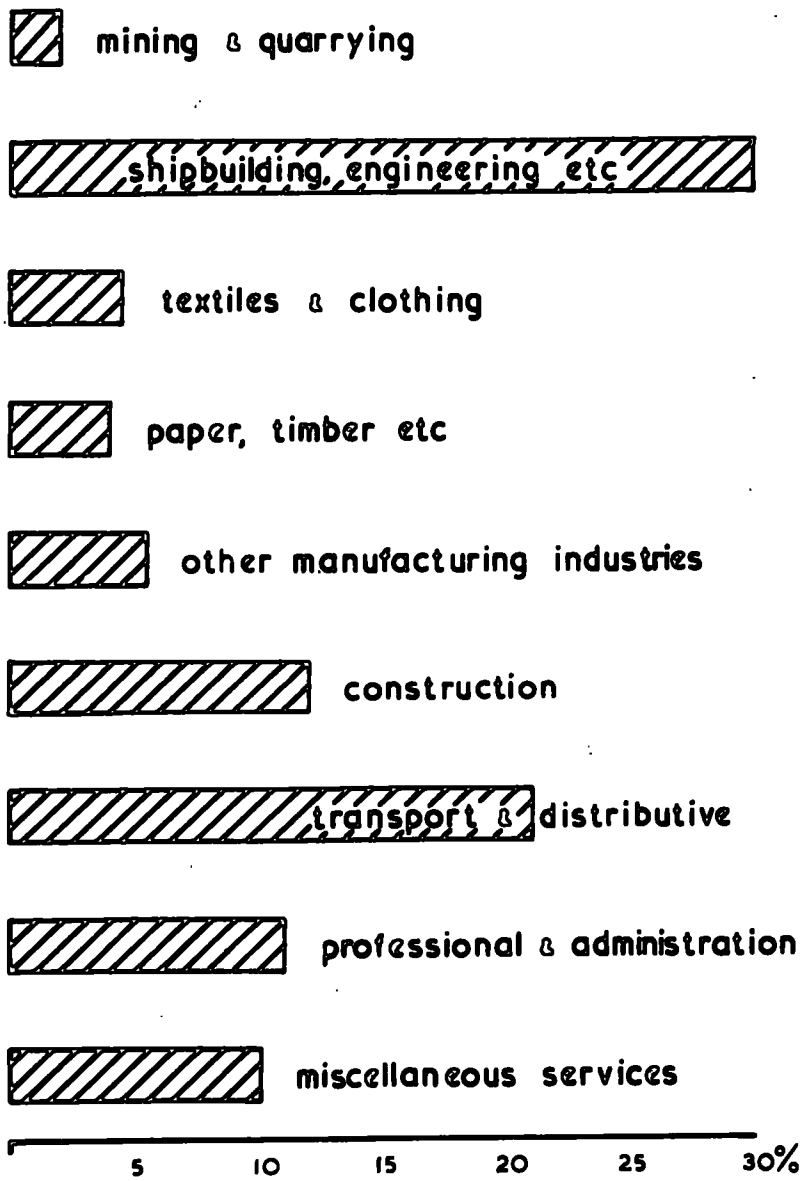
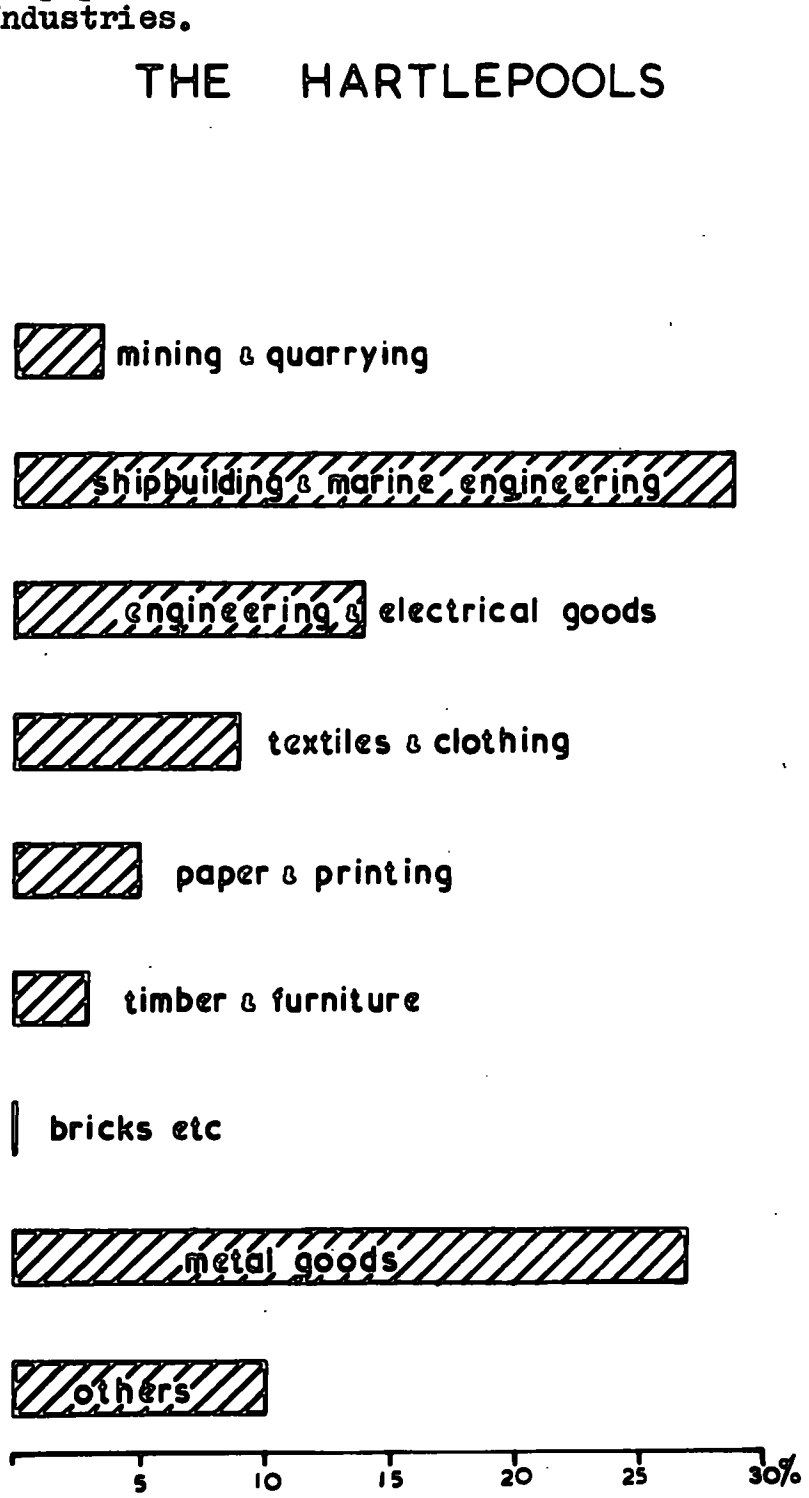


Fig. 27. Diagram showing the percentage distribution of the working population of the Hartlepools by occupation.

Fig. 28. Diagram showing the percentage distribution of population in the Extractive and Manufacturing Industries.



Chapter 11. INDUSTRY AT THE HARTLEPOOLS.

The first major industry established in the Hartlepools was shipbuilding. A world-wide demand for the new iron steam-ships coincided with the discovery in 1850 of iron-stone seams at Eston some fifteen miles to the south of the Hartlepools. Iron-founding, rolling, forging and engineering grew up at once around the parent shipbuilding industry, and these in turn, gathered around them a variety of subsidiary industries for which they constituted an easily available market.

Soon after 1850 the builders of wooden ships in the Hartlepools turned almost exclusively to the construction of iron ships, and the Iron-Masters in turn concentrated on the production of angles and plates needed for these ships. Each industry therefore fostered the early growth of the other. The largest shipbuilding firm, and for some years now the only one in the Hartlepools, is that of William Gray & Co. Ltd. On six occasions before the turn of the century, in 1878, 1882, 1888, 1895, 1898 and 1900 the firm won the Blue Riband for the highest tonnage of the year launched in the United Kingdom. All through its history, the firm has specialised

in plain cargo ships, bulk carriers and cargo liners of between 2,000 and 17,000 tons deadweight. With the fairly recent development of large 'speciality' ships such as oil tankers and ore carriers etc. the Hartlepool shipbuilding industry has found itself at a serious disadvantage because, in the absence of a navigable river, the ships have to be launched into the docks and this imposes a severe restriction upon the size of vessels that can be built.

The boats launched at the Hartlepools are nearly all engined at the Central Marine Engine Works which are a subsidiary of William Gray & Co. Ltd. The works are equipped with large machine shops, a boiler shop, two iron foundries, a brass foundry and a drop stampings department. The demand for marine engines has decreased considerably since the 1st World War, and the Engine Works are now carrying out an increasing amount of general engineering work. Richardsons and Westgarth Ltd. are also marine engineers, but since the depression of the early 1930's they have turned their attention more to other aspects of engineering. The company is an associate of Atomic Power Constructions Ltd. and through them has secured orders to build power-station equipment for the nuclear power station now under construction

at Trawsfynydd in North Wales. Other work includes alternator sets for the new conventional power station at Richborough, and gas turbine sets for Multan, Hyderabad and Kuwait. In spite of unemployment figures well above the national average this particular industry has difficulty in recruiting skilled labour for this type of work.

During the 1850's, the Hartlepools found themselves ideally situated for the development of the iron and steel industry. Coal and limestone could be obtained locally from County Durham, iron ore was obtainable from the Cleveland Hills, and as already pointed out, the shipbuilding industry provided a local market. Several firms started production, but since 1898, the only large firm working in the Hartlepools has been the South Durham Steel and Iron Co. Ltd. Production of pig-iron is not large by Tees-side standards, but expansion is going on at the new South Works, and this year (1960) two new Basic Open Hearth Furnaces have come into production together with new Slabbing and Plate Mills. Most of the pig-iron is converted into steel plates and sheets for use by the marine and metal industries of the area, but special alloys are also made for industries in other parts of the country such as Birmingham and Glasgow.

Several smaller concerns are engaged in iron-founding of a specialised type, the most important of which is the Expanded Metal Co. Ltd. This firm commenced by making diamond mesh for concrete reinforcement, but have since developed their output to produce a wide variety of products from anti-dazzle screens for the M.I. Motorway, meshes and screens for electrical equipment, to submarine pipelines for Persian Gulf Oil. This is one local firm where the future looks promising and, with new techniques in plastic coated finishes, further inroads are expected in the industrial markets.

The import of timber into the Hartlepools has given rise to a considerable woodworking industry. Nearly one half of the imported timber is sawnwood, and although some of this is used in the local shipbuilding yards, the trade has given rise to a variety of manufacturing industries, including the recently established North of England Match Co. Ltd., and numerous smaller concerns engaged in cabinet making, the preparation of railway sleepers, and building woodwork. In common with most ports in the North East, paper manufacture from Scandinavian wood-pulp has grown up alongside the timber trade. The Durham Paper Mills are the local concern engaged

in this industry, and are one of the few larger concerns that employ women in any numbers.

Fishing has been an important activity in Hartlepool for at least 800 years, and is still almost exclusively a Hartlepool industry. In spite of the construction of a new and enlarged fish-quay in 1910, landings severely declined between the wars, and in 1938 the Scottish fish-wives failed to visit the port for the first time. Most of the fish landed is white fish, and is sent direct by rail to centres such as Nottingham, Manchester, Birmingham and London. An ice factory was established in 1913 and there is also a small fish-curing and packing station, but except for a few small fishing boats most of the fish-landings are at South Shields and further south in Yorkshire.

The chemical industry is also represented in Hartlepool at the Steetley Magnesite Co. Ltd., situated on the coast. This firm processes magnesian limestone and sea water to produce magnesian oxide from which a wide variety of products are derived. The most important product is refactory bricks for iron and steel furnaces, and the company has been able to sell this product not only in this country but also in the U.S.A., Japan, Australia and the Continent. The firm

have recently decided to improve their plant so that they can increase their production capacity from 155,000 tons to 210,000 tons per annum. The Cerebos Salt works are situated at Greatham, and they produce salt, not only for domestic purposes, but also for the I.C.I. at Billingham.

Since the war, a Trading Estate has at last been established at the Hartlepools. The area was included in a "special area" in 1932 and a 97 acre site was chosen partly situated in the town of Hartlepool and partly in West Hartlepool. The war put a brake on the building of new factories, but since then the Trading Estate has become well-established and indeed, the only vacant factory space is a large shed. The factories on the Estate now employ 4,117 workers, though only 1,158 of these are men. The various factories on the Estate cover the manufacture of telephone exchange equipment, drawing office equipment, wooden furniture, clothing, worsted materials, nylon stockings and knitwear, and paper and polythene wrappings. As the Estate falls within the "Development District", continuing efforts are being made to interest industrialists in the possibility of setting up their plant here, for there is ample space available for further factory building should this be

required.

"Lacking the expanded industry of Tees-side or the wider opportunities for employment associated with a large population aggregation such as Tyneside, with its concentration upon distribution and commerce as well as upon productive industry, the Hartlepools, in the interwar period, suffered consistently high unemployment and rather less than held its own in comparison with other major industrial centres in the area."(9) At the present time the position is considerably brighter with a much greater diversity in industry as a whole. But enemployment is still above the national average, shipbuilding orders are few and far between, and the industrial aspect of the Hartlepools must continue to give cause for anxiety.

Chapter 12. TRADE AT THE HARTLEPOOLS.

In the past, trade at Hartlepool has fluctuated as the political importance of the place has varied. When the Prince-Bishops of Durham had control over the Palatinate, Hartlepool was the chief port of the county. "The articles of the trade at Hartlepool were corn, the neighbourhood being very fertile, herrings and other fish, wine, wools, and hides."(4) Wool was exported from the large monastic houses of Fountains, Ripon, Jervauix and Guisborough; and imports to these places included fish, and tar for caulking the hooves of sheep. However, the wool trade of Hartlepool was temporarily destroyed by a statute in 1353 which made Newcastle the staple town from whence alone might be shipped the wools of Northumberland, Durham, Cumberland, Westmorland, Richmond and Allerton. This was a great set-back to Hartlepool, but the mayor and burgesses of Newcastle continued to watch Hartlepool with a jealous eye, "and in 1560, on the first symptoms of its recovery from this blow, they sent a petition to the government declaring that Hartlepool was a member of the port of Newcastle, and that hitherto the trade of Hartlepool had been confined to the fisheries, but 'they do ship wools, fells, lead and other merchandise,

sometimes paying custom, and many times depart without any custom paying..... so that without speedy reformation our young men of Newcastle..... perceiving the liberty there, the small charges, and the transporting of the wool shipped there to Amsterdam, Haarlem and other towns in Holland..... will leave the town and inhabit Hartlepool.'"(4) There is no doubt that there was some truth in these accusations, for Hartlepool at this time was shipping wool from parts of Yorkshire, such as Pickering Lythe, which were not appropriated to Newcastle. Lead from Stanhope was also exported as appears from the will of John Featherstone of Hartlepool, dated 1507.

According to the report of the Harbour Commissioners in 1565, however, Hartlepool was represented as being a very small place, with only one ship belonging to the port. By 1680, Hartlepool had so diminished in importance that it was made a dependent port on Stockton; and from 1725 to 1832 the commercial condition of Hartlepool gradually declined to that of a small fishing town. This decline in trade corresponded with the withdrawal of Palatinate powers by Henry VIII, with the result that other ports in County Durham, notably Stockton, Sunderland and Gateshead, sub-

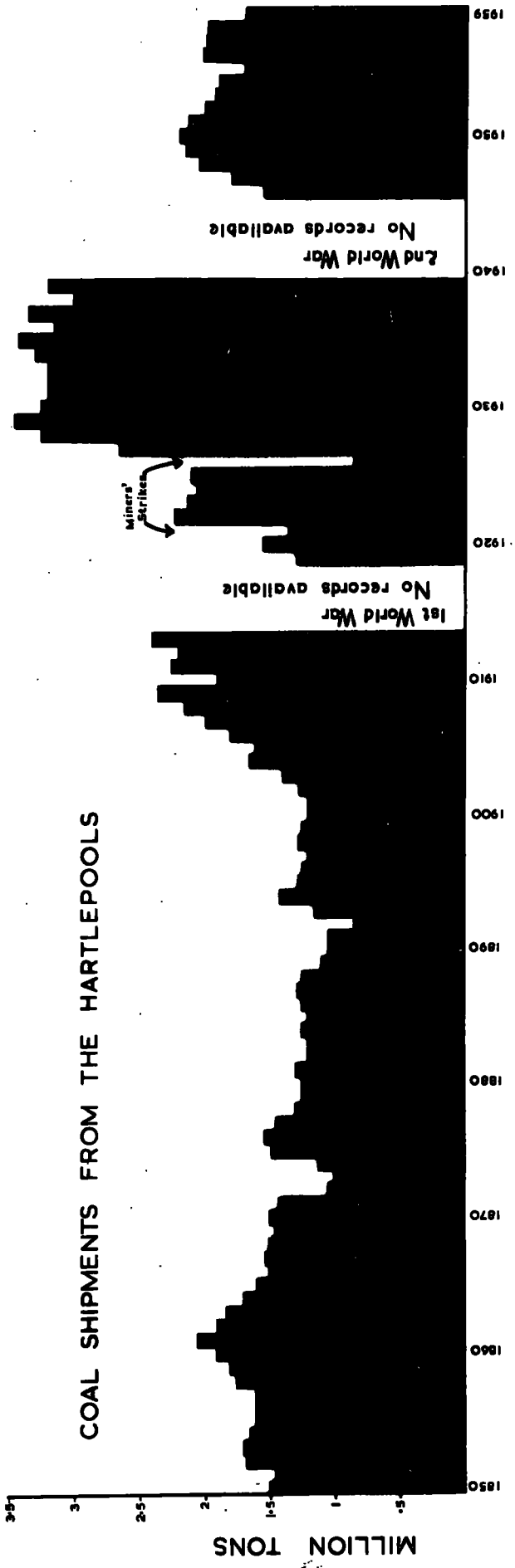

COAL SHIPMENTS FROM THE HARTLEPOOLS
MILLION TONS
3·5
3
2·5
2
1·5
1
·5
1850
1860
1870
1880
1890
1900
1910
1920
1930
1940
1950
1959
1st World War
No records available
Miners' Strikes
2nd World War
No records available

Fig. 29.

sequently benefited and expanded their trade at the expense of Hartlepool.

The building of the railway to Hartlepool in 1832 brought a new lease of life to the decaying port. Coal from south Durham found a natural outlet at the Hartlepool docks, and by 1850 1½ million tons of coal were being shipped each year. (See Graph Fig. 29 and Table 16) From the 1870's onwards, however, the pits of south-west Durham began to become worked out, and there was thus a steady decrease in the amount of coal that was shipped. But, from 1900 onwards there was a big development of the concealed East Durham coalfield, and a number of large pits were sunk within easy reach of the Hartlepools. This had the effect of stimulating the coal shipments, which gradually increased to over 2 million tons per annum, except for the low totals during the 1st World War and the strike-years of 1921 and 1926.

From 1928 until the beginning of the 2nd World War the total for every year was over 3 million tons, but shipments after 1945 have by no means caught up to the pre-war level, mainly because of the loss of the foreign export market. At the present time, coal shipments are between 1½ and 2

million tons per annum, but the total appears to be gradually decreasing. The bulk of the coal comes from the National Coal Board No. 3 Area, which includes the Blackhall, Horden, Shotton, Haswell, Wheatley Hill, Trimdon and Wingate pits. Whereas before the 2nd World War there was a considerable foreign trade, nowadays, 95% of the coal trade is coastwise, whilst the 5% of foreign trade is virtually confined to Italy.

As can be seen from Table 18, the Hartlepools, especially between 1861 and 1914, had a considerable export trade in general cargo; in fact, at one time, the port had the biggest general cargo trade on the North East coast and was the headquarters of shipping companies with world-wide connections: it was frequently referred to as the future Liverpool of the North East coast. In 1890 the port was the fourth most important in the United Kingdom from the point of view of registered tonnage (See Table 7), though it still came a long way behind the three big ports of Liverpool, London and Glasgow. The main reason why the Hartlepools were so important at this period was probably because the docks were the terminal of the Old Leeds Northern Line, and thus had much of the trade with the West Riding of Yorkshire.

Since 1914, however, the general cargo export trade has not been of very great importance, the decline being due to two major factors. Firstly, the number and tonnage of vessels owned at the port decreased rapidly during the 1st World War. This was partly due to war-time losses by enemy submarines and mines which accounted for 72 vessels; but a still larger number were sold, the owners being attracted by the high prices obtainable at the time. The second reason was the centralisation policy of the London & North Eastern Railway, which meant that the Hartlepools lost its important trading connection with the West Riding of Yorkshire. These two factors were responsible for virtually ending the general cargo trade in the Hartlepools.

In the last few years, the general export trade has shown signs of increasing in value again, though this is due mainly to the export of a few specialised items and in no way heralds the return of the general cargo trade. Several large cargoes of Basic Slag have been shipped to Belgium and Germany for use in the chemical industry, and in addition, about 5,000 tons of magnesite are exported annually to Rotterdam for use as a refactory material in blast furnaces.

Excluding coal shipments, imports into the Hartlepools

have always been far more important than the exports. In the nineteenth century, the Hartlepools were used as an important grain importing port; in fact, the two large warehouses now to be seen at the docks were build specifically for this purpose. The decline in this trade has been due to the building of large silos at Manchester and Hull, and the use of bulk-handling methods from large vessels which the Hartlepools are not capable of accommodating. Flour was also imported between 1885 and 1897. Flax and hemp were imported between 1852 and 1864, and from 1852 to 1897 there was a considerable trade in livestock from Ireland and the Continent. In 1866, for example, 54,229 head of livestock were imported into the Hartlepools. This trade ceased with the introduction of large specialised refrigerated ships. Eggs were also an important item of trade. As can be seen, most of these items were foodstuffs and were imported for the rapidly growing industrial population of Durham and Yorkshire. At the present time the only foodstuffs imported are sago flour and fish.

Iron ore was first imported from Spain in 1861, and since then this raw material has been an important item in Hartlepools' trade. The bulk of the ore is used locally in

the South Durham Iron and Steel works, and most of it comes from Sweden, though there are imports also from Spain, North Africa and Venezuela.

Timber is the chief import into the Hartlepools; in fact, as far as timber is concerned, the Hartlepools are a port of national importance. Timber was first imported into the Hartlepools during the railway-building 'mania' of the 1840's, and was later imported for use as pit props and shipbuilding material. At the present time the proportions of timber are as follows:-

1958.	Battens, Boards, Deals, etc.	45%
	Sleepers.	13%
	Mining Timber, Round & Square.	10%
	Pit Props.	32%
Total:	210,019 Loads =	100%

Pit props come mainly from the U.S.S.R. and Scandinavia; soft wood from Scandinavia and British Columbia; hard wood from West Africa; and wood pulp from Sweden and the U.S.S.R. The trade is seasonal as the Scandinavian countries, the U.S.S.R. and Canada are ice-bound during the winter, and this does present a problem as far as employment is concerned.

Other imports are: chalk and gravel for the cement

industry - though this has not been of very great importance since the 1920's; and scrap iron and steel for use in the iron and steel works at West Hartlepool.

The Hartlepools have thus experienced many changes in the character of their trade, but during the last hundred years the variety of goods dealt with has decreased, and the pattern is now one of coal exports (coastwise) and timber and iron ore imports. As mentioned in a previous chapter, the port at the Hartlepools is one of the many terminal facilities still laid out for double the trade carried by ships half the size.

Chapter 13.

THE HARTLEPOOLS' SPHERE OF INFLUENCE.

The Hartlepools are somewhat isolated geographically and as a result they have a fairly well-defined urban field which includes nearly the whole of south-east Durham. In practice, however, the picture is not so clear-cut as the map (Fig. 30) suggests.

In the south, the three towns of Middlesbrough, Stockton and Darlington make considerable inroads into this otherwise well-defined urban field, and in a sense these three centres share the same urban field with the Hartlepools, though it has not been possible to determine exactly the full extent of this. It is probably true that Stockton has much better shopping facilities, including a very good open market, than has West Hartlepool, and therefore much of the population south west of the Hartlepools is drawn to Stockton - at any rate, as far as shopping is concerned. On the other hand, as far as entertainment is concerned the 'pull' is towards Middlesbrough.

In the west, the influence of Durham will be fairly strong and in this quarter there must be a considerable area which is contained in the urban fields of both Durham and

West Hartlepool.

In the north there is a well-defined zonal boundary and in general it is correct to state that north of Easington Village it is drawn towards Sunderland, whilst south of it is drawn towards West Hartlepool. It is interesting to note that the new town of Peterlee is situated at the northern edge of the Hartlepools' sphere of influence, and if it develops as the planners hope it will, it will gradually generate a sphere of influence of its own which will no doubt detract from that of West Hartlepool.

The Hartlepools then, are situated between two rapidly developing areas: Peterlee in the north and the new industrial areas of Tees-side. Hartlepool has already ceased to have a sphere of influence outside its own municipal boundaries, and the influence of West Hartlepool within the area is gradually contracting.

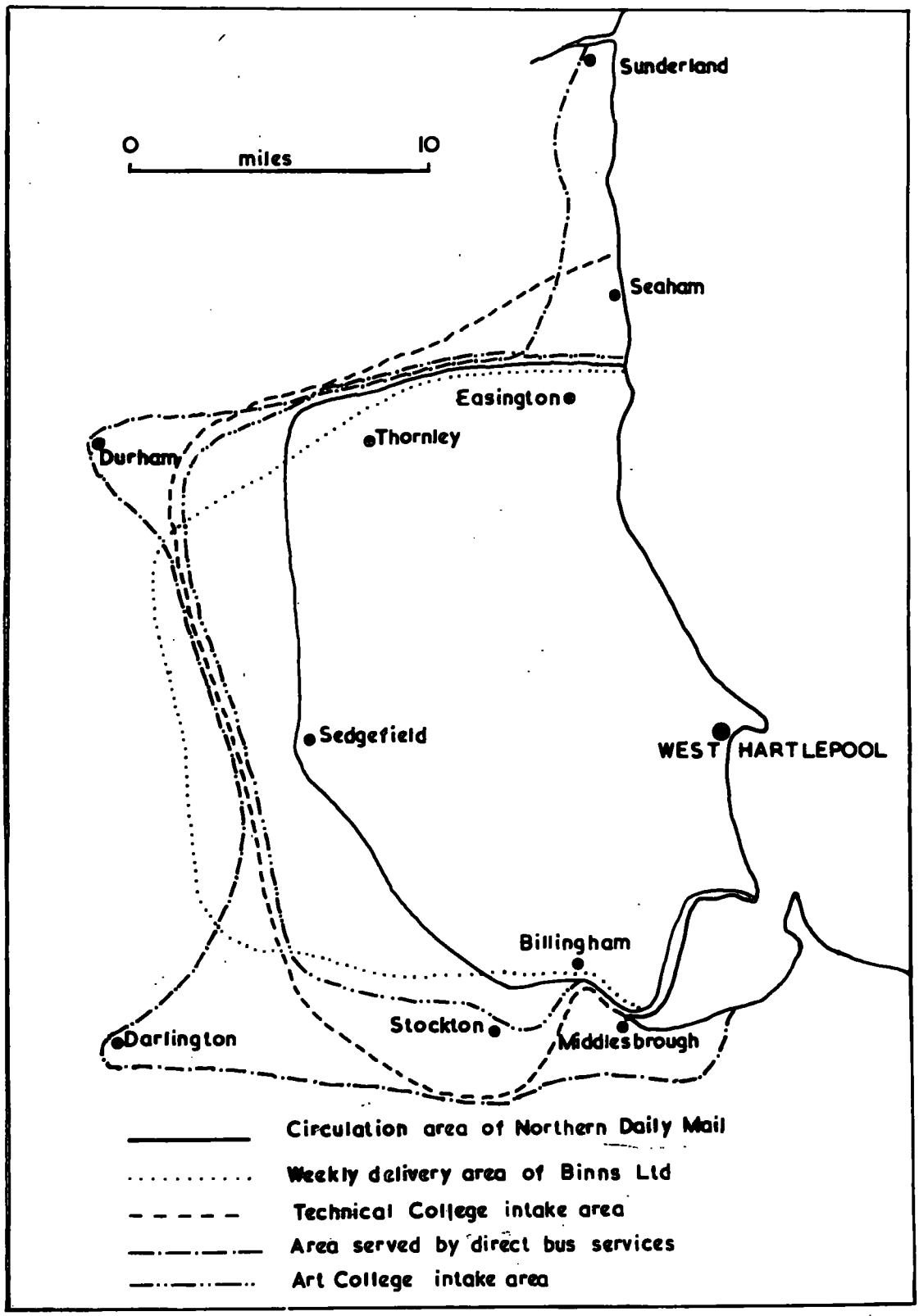


Fig. 30. Map showing selected criteria delimitating the Hartlepools' Sphere of Influence.

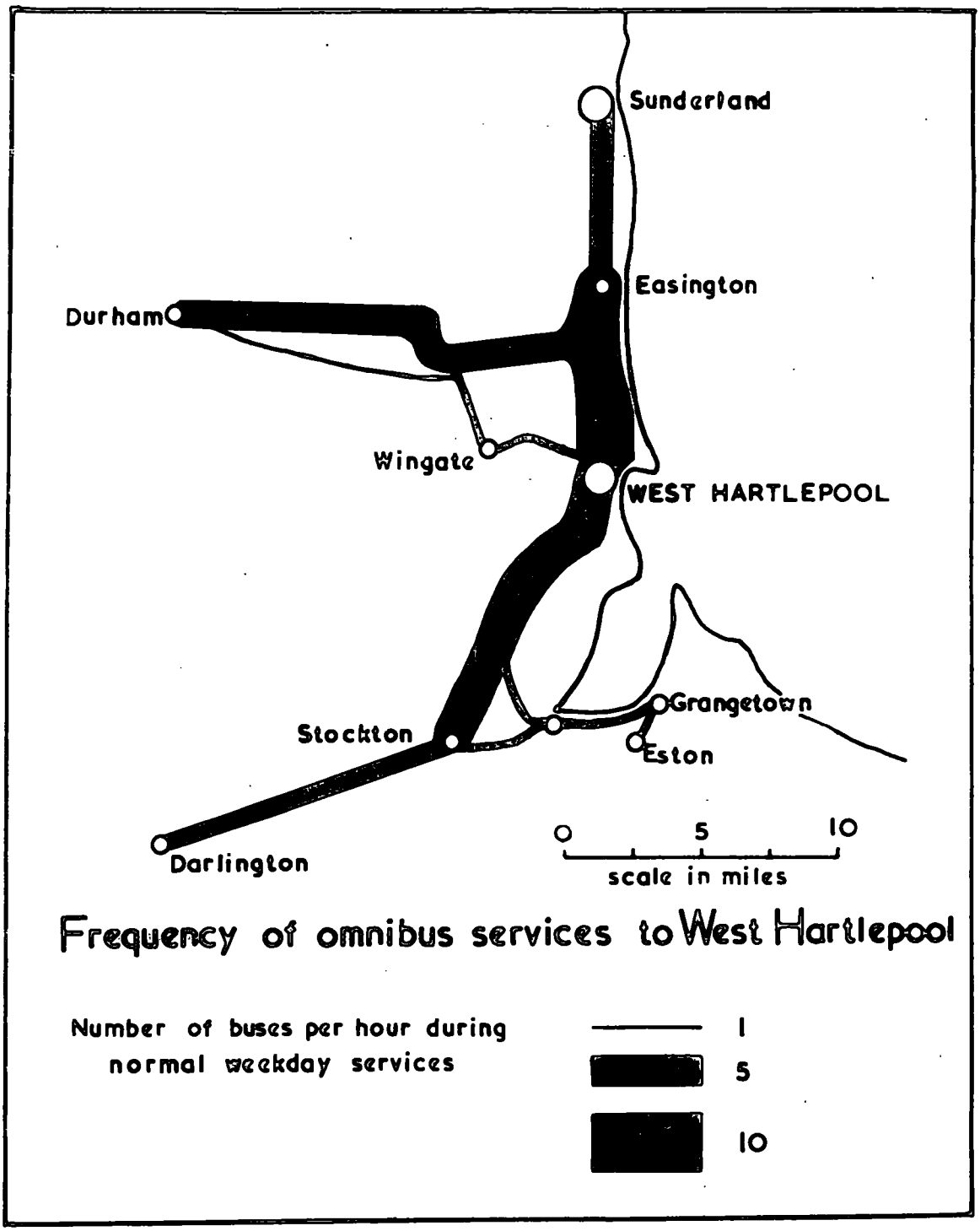

Sunderland
Easington
Durham
Wingate
WEST HARTLEPOOL
Grangetown
Stockton
Eston
Darlington
0 5 10
scale in miles
Frequency of omnibus services to West Hartlepool
Number of buses per hour during normal weekday services
1
5
10

Fig. 31.

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6. Northern Daily Mail. Celebration copy of 1927.

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PART FIVE.

SEAHAM

Chapter 14. Site and Settlement.

Seaham is situated on the coast of County Durham some five miles south of Sunderland. The village of Seaham, as opposed to Seaham Harbour and New Seaham, is situated on the northern side of Seaham Dene, which is a post-glacial stream cut through the boulder clay overlying the Magnesian Limestone of the East Durham Plateau. The more modern creation of Seaham Harbour is situated about half-a-mile south of Seaham Dene on the cliff-top facing the sea.

In one sense, Seaham is more than a thousand years old; in another, a mere hundred and thirty. The older Seaham is first mentioned in 930 A.D. when it was granted to the Church by King Athelstan. The village had its manor-house, its church, its farm houses and its cottages - a self-sufficient community concentrated around the church just to the east of the present-day Seaham Hall. To the south of this village, in the area then called Dalden (Dawdon) and now part of Seaham, there was a manor-house called Dalden Towers and three farms situated in Dawdon Dene. Between these two settlements, that is in the area now occupied by

Seaham Harbour, there was nothing except farmland, and it remained thus until the nineteenth century.

A reference to Seaham in the year 1808 speaks of it as being a "little bathing hamlet on the coast of Durham..... Except the clergyman's family there was none of gentle degree in the village; it was the most primitive hamlet ever met with, a dozen or so of cottages, no trade, no manufacture, no business doing that we could see: the owners were mostly servants of Sir Ralph Milbanke's".(1)

In 1821 the whole of the Seaham estate came into the possession of the Londonderry family, and the attention of the Marquis of Londonderry was drawn to a plan for constructing a port on the coast of Seaham in which certain of the inlets might be extended and piers erected on the rocks for their shelter. The whole idea was conceived by Sir Ralph Noel, and he it was who, in 1820, instructed William Chapman to prepare a plan for that purpose.

The site selected for the works was a range of bleak and barren rocks, facing the sea, with hugh fragments of isolated rock projecting into the sea. It was considered that if the inlets between the headlands were enlarged, and piers built for their protection, the resulting harbour

would be ideal for the sailing ships of the time. According to William Chapman, the engineer in charge, "it is obvious that the entrance of this Harbour, whenever prudent to enter, will, under many predicaments, be safer than that of Sunderland..... It is likewise equally obvious that no Harbour on the Coast, with the exception of Blyth, can have so good an outlet to the south as Seaham Harbour, which, from being on a prominent part of the shore, enables the vessels bound in that direction to clear the Yorkshire Coast in N.E. winds, when those from the Tees, would be too deeply embayed to proceed in either direction".(2)

The scheme quickly commended itself to Lord Londonderry because at that time he was experiencing a certain amount of trouble with the arrangements for exporting the coal from his Rainton pits through the port of Sunderland. The facilities for coal shipment from the Wear were of limited capacity, and as a result the River Wear Commissioners had imposed an embargo which limited the amount of coal that each owner could export. This restriction irked the progressive Lord Londonderry. In addition, the dues charged by the keelmen and the River Wear authorities, were, in the opinion of his Lordship, excessive. Furthermore,

Seaham was situated almost due east of Lord Londonderry's Rainton pits, and once the coal had been hauled up onto the Magnesian Limestone plateau, there was a steady gradient to the harbour down which the coal waggons could travel under their own gravity. So, in 1821, the construction of the harbour was begun, and such would be its success Lord Londonderry is claimed to have boasted, that it would cause grass to grow in the streets of Sunderland!

The locality of Seaham "presented many formidable obstacles to such an undertaking. The sea-board was by no means favourable. It was necessary to excavate the limestone rock, which here forms the ocean barrier, and public opinion generally pronounced the scheme, if not impracticable, an unprofitable and bold undertaking. Year after year the noble Marquis pursued his laudable object, undaunted by difficulties, as in everything he undertook, which would have dismayed ordinary minds; he surmounted every obstacle, and now a populous and prosperous port and town, the convenient outlet of an extensive and valuable Coal district, justify the foresight of the noble Marquis, and his Manager, and enable us to appreciate their sound judgement, spirited enterprise, and dauntless courage".(3)

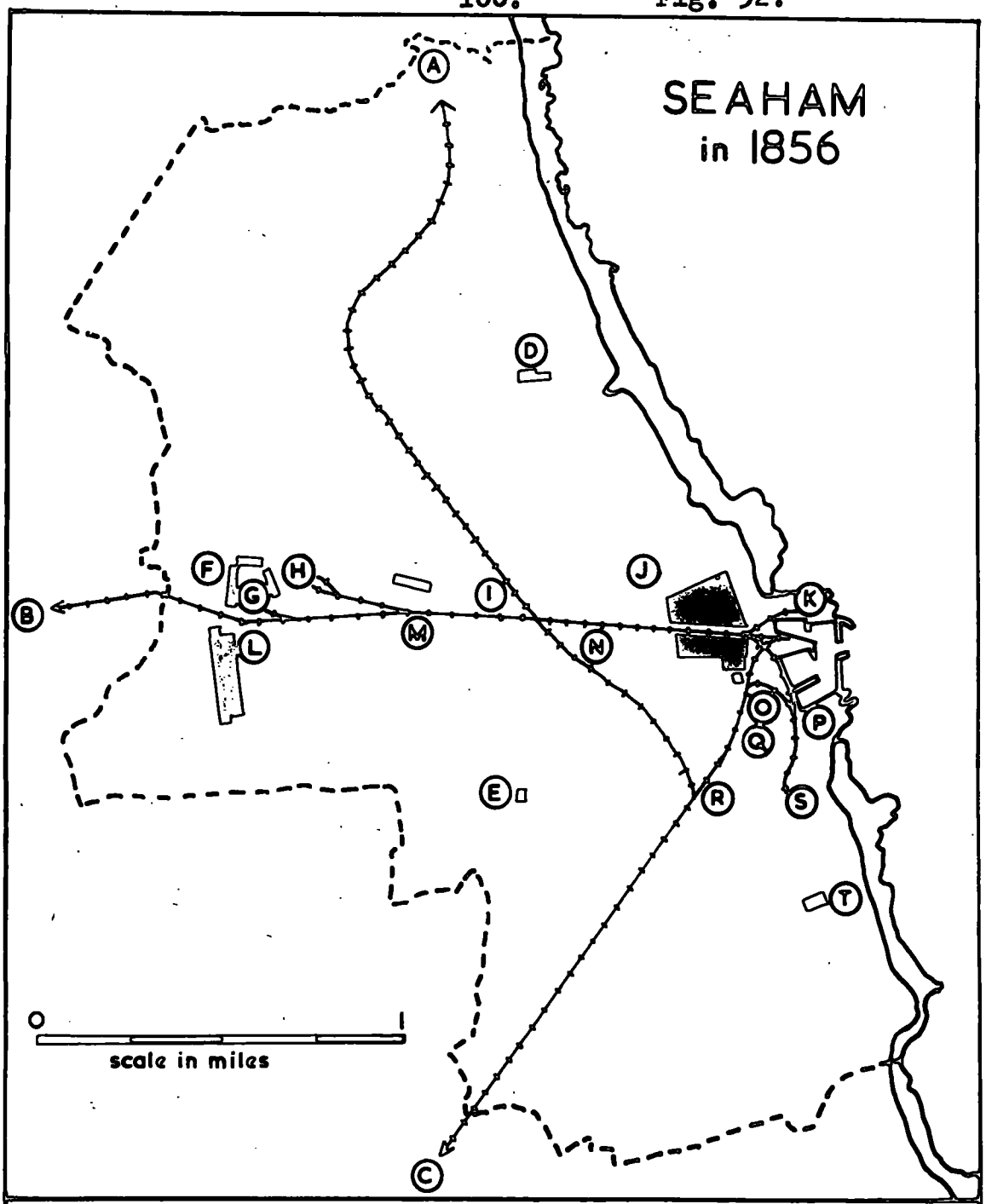
The Rainton Line, built by George Stephenson in 1822, was extended to Seaham Harbour, and the first coal was exported through the docks in 1831. The new town of Seaham Harbour had no old nucleus around which it could be built, and it consequently took the form of a rigid grid-iron pattern placed either side of the Rainton Line. (The North East Development Area Outline Plan (1949) speaks of this area as being "huddled amidst a ganglion of railway lines... entirely unsuitable for human habitation".) Some twenty years later (c.1851) a new settlement was built by the side of Seaton and Seaham Collieries situated about a mile inland along the Rainton Line; this new settlement was known as New Seaham. The present town of Seaham thus had two parent nuclei: Seaham Harbour and New Seaham. To the north was the little village of Seaham, still untouched by these developments, and to the south was the smaller settlement at Dalden Towers. The two nuclear settlements gradually expanded and grew towards each other along the Rainton Line, and this process continued until the early part of the twentieth century, except for an abortive attempt to start a settlement at Watsontown (See Figs. 32 & 33) sometime between 1856 and 1895.

The opening of Dawdon Colliery in 1907 and of the new South Dock in 1905 were responsible for a considerable enlargement of the town particularly towards the south (Fig. 34), and the sinking of Vane Tempest Colliery between the wars, was also responsible for an extension in area, especially towards the west (Fig. 35). Post-war development has been mainly concentrated in the New Seaham area, and has been primarily concerned with the re-housing of tenants from the condemned buildings of the original Seaham Harbour.

It can be seen therefore that the site of Seaham Harbour was chosen for two main reasons which are now no longer of any account. First, the site was particularly advantageous for use by sailing ships especially as regards their convenience in sailing towards the south. Since the introduction of steam ships this initial advantage has been lost, and the fact of its exposed position is now a definite disadvantage for in bad weather Seaham is the first of the North East coast ports to be closed.

The other factor regarding the site of Seaham was that it was built for the export of coal from the collieries belonging to the Londonderry family at a time just before the establishment of the railways. Seaham was chosen as

the site for the docks because it lay immediately to the east of the Londonderry Rainton pits and could easily be reached by the coal waggons of the time along a route which allowed the waggons to descend to the coast under gravity. The opening up of the coalfield by the railways and the subsequent ease with which the coal could be hauled to the ports placed Seaham at a disadvantage, for it was not easy to expand the dock facilities along this rocky and exposed coast.



(A) Londonderry Private Railway 1854
(B) Rainton Line
(C) South Hetton Railway
(D) Seaham Hall
(E) Dalden Towers
(F) Colliery Rows
(G) Seaton Colliery 1845
(H) Seaham Colliery 1852
(I) Colliery Station
(J) Gas works
(K) Lime kilns
(L) Brickfield
(M) Water Works
(N) Seaham Station
(O) Saw mills & Fish market
(P) Patent slip
(Q) Seaham Iron Works
(R) Brickfield
(S) Bottle Works
(T) Marl pit

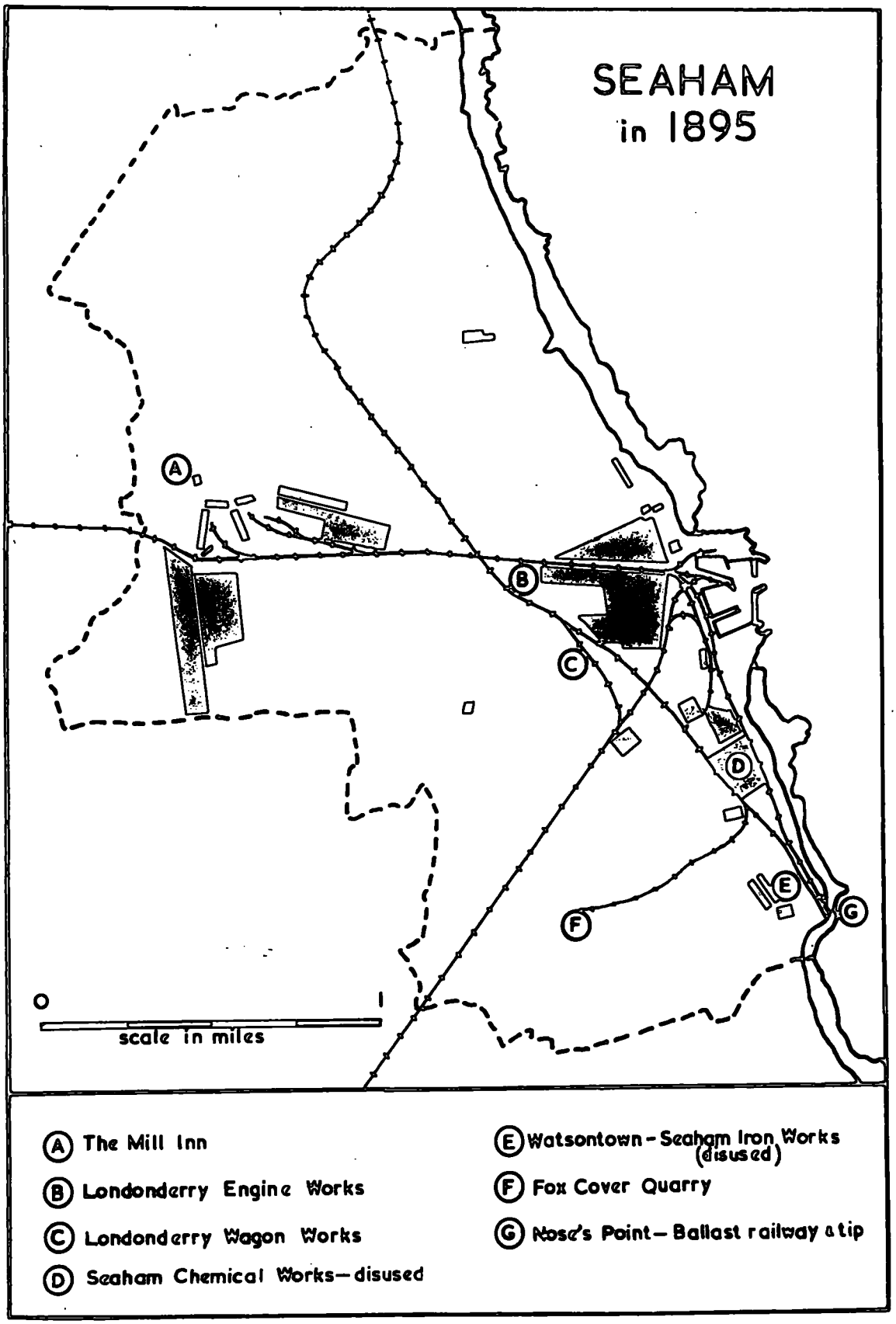

SEAHAM
in 1895
A
B
C
D
E
F
G
0
1
scale in miles
A The Mill Inn
B Londonderry Engine Works
C Londonderry Wagon Works
D Seaham Chemical Works—disused
E Watsontown - Seaham Iron Works (disused)
F Fox Cover Quarry
G Nose's Point — Ballast railway tip

Fig. 33.

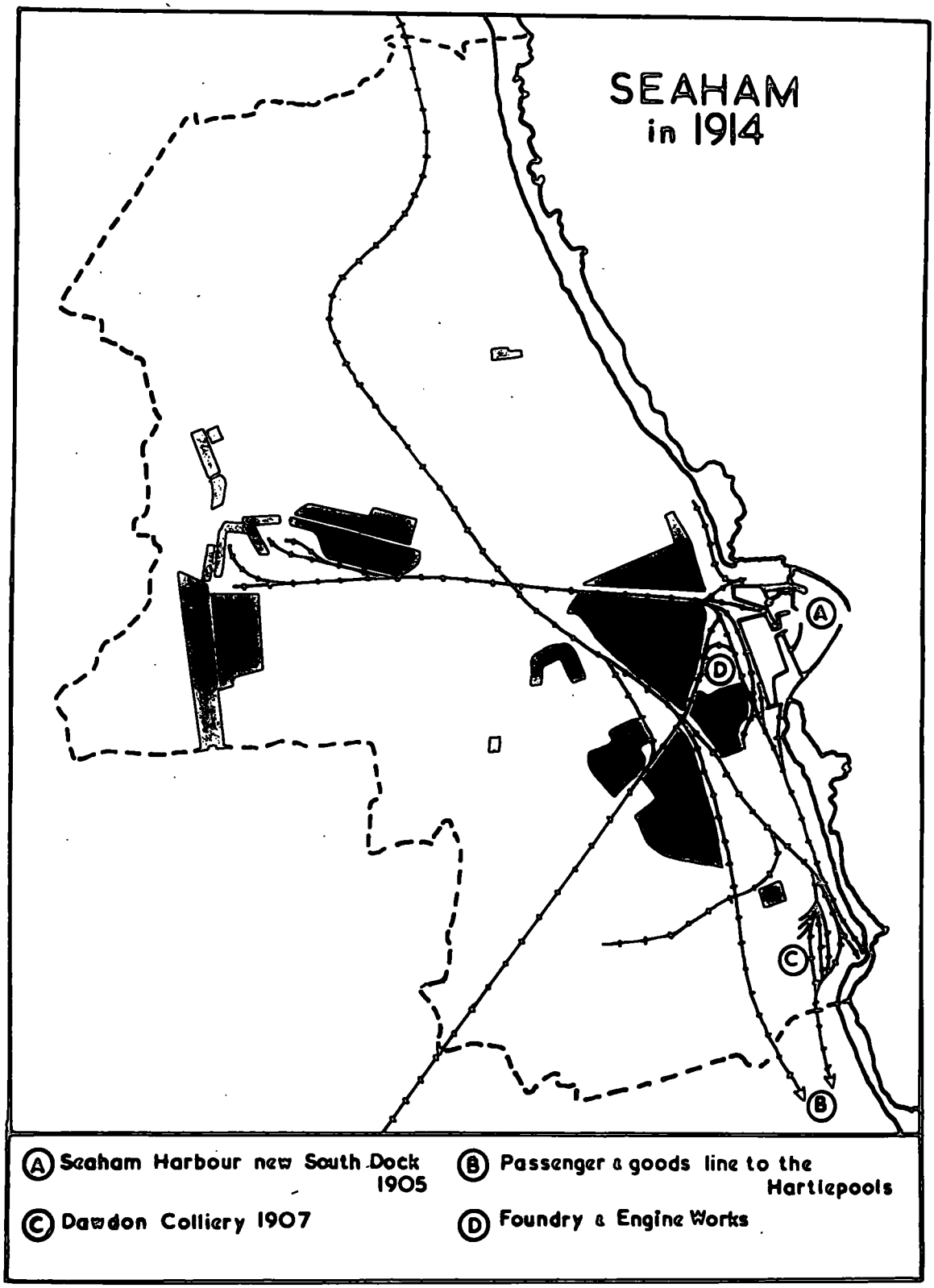

SEAHAM
in 1914
A
D
C
B
A Seaham Harbour new South Dock 1905
B Passenger & goods line to the Hartlepools
C Dawdon Colliery 1907
D Foundry & Engine Works

Fig. 34.

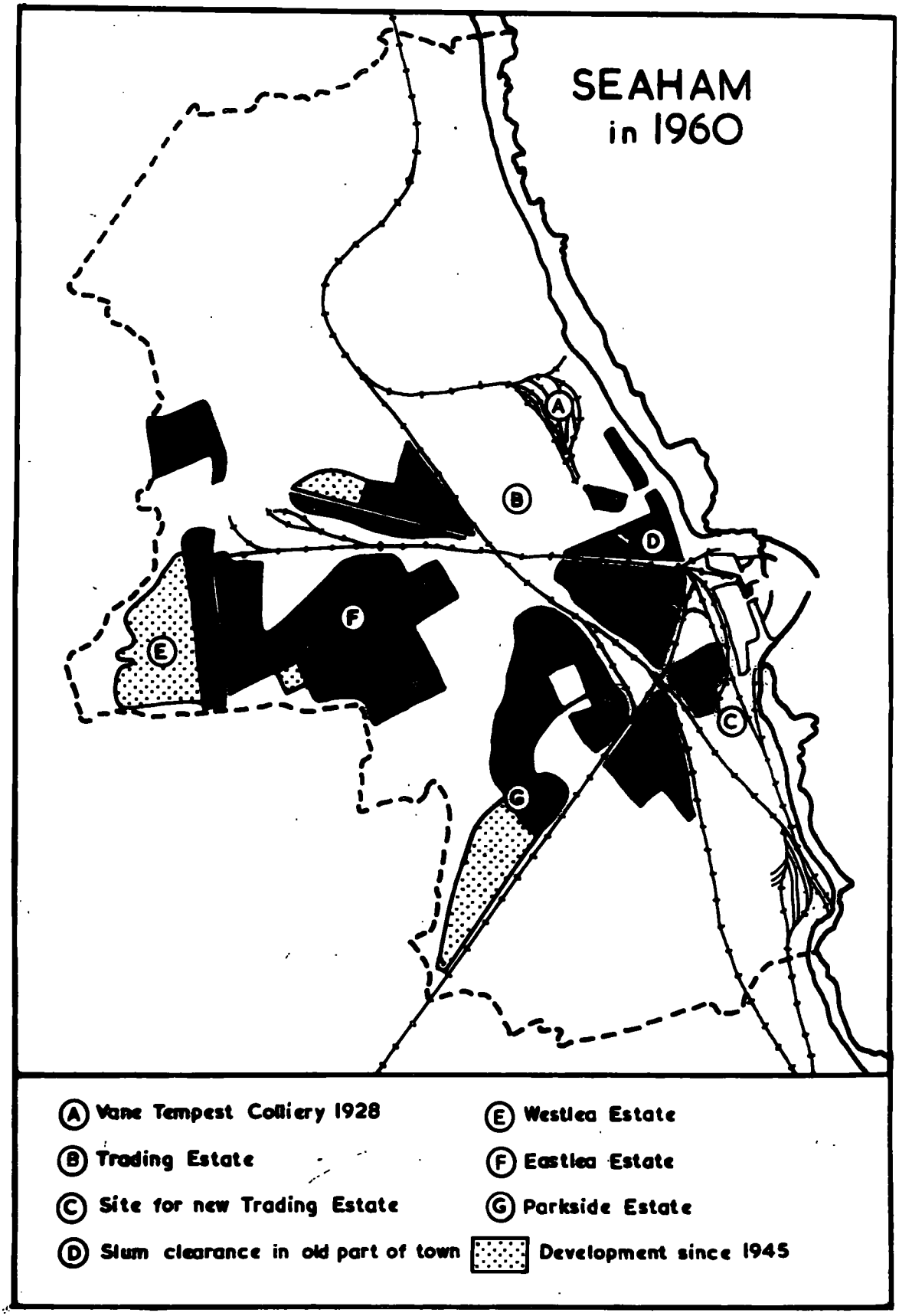

SEAHAM
in 1960
A
B
C
D
E
F
G
A Vane Tempest Colliery 1928
B Trading Estate
C Site for new Trading Estate
D Slum clearance in old part of town
E Westlea Estate
F Eastlea Estate
G Parkside Estate
Development since 1945

Fig. 35.

Plate VII.

View of Seaham Harbour from over the sea.

The photograph shows the way in which the harbour has been built out into the sea in a very exposed position. The railway line which serves the docks can be seen bissecting the town into a northern and southern part. North of Seaham is Vane Tempest Colliery, very near to the edge of rapidly eroding cliffs. Behind the colliery is Seaham Hall and the site of the original Seaham Village. The stacks that can be seen north of the Harbour are known as Featherbed Rocks. The outer one is in fact an arch, but it has now been completely eroded away.

Plate VIII.

View of Seaham Harbour from over the land.

This photograph shows the lay-out of nearly the whole of the dock system at Seaham. As can be seen, there are no warehouses or cranes that one usually associates with a dock. The only facilities are in the form of staiths and these can be seen along the edge of the South Dock. The outer harbour, within the two main sets of piers, is tidal but the dock itself is sealed by locks and can only be entered at high water.

Chapter 15. Population.

At the time of the first census in 1801 the population of the parish of Seaham numbered only 211, and it remained at about this number until work was begun on the Docks at Seaham Harbour in 1828. At the 1831 census, the combined population of the old parish of Seaham and the new parish of Seaham Harbour numbered 1,286. Thereafter, the population of both parishes increased considerably, as is shown on the graphs Figs. 36 and 37.

In 1845 and 1852 the two collieries of Seaton and Seaham were sunk, and as a result the population more than doubled by 1861. By the end of the nineteenth century the population had increased to 15,000. In 1907 Dawdon Colliery was opened and the population again increased, so that by the census of 1911 the numbers in the two parishes had gone up to over 21,000. Unlike other industrial centres in the North East Seaham experienced no noticeable decrease in the population as a result of the depressions in the early years of the twentieth century.

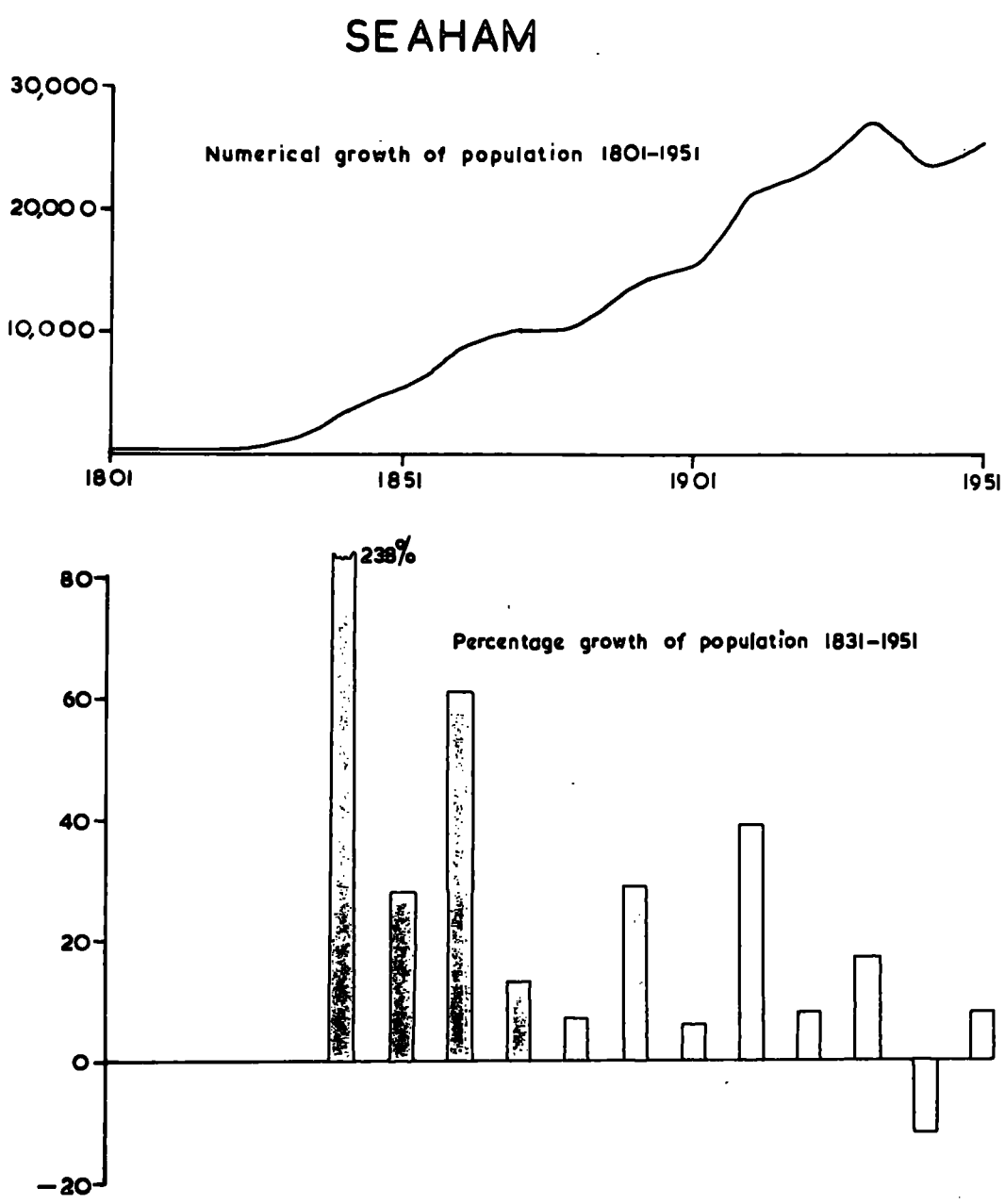
In 1928 the third colliery, that at Vane Tempest, was opened, and this again was responsible for an increase in

the population of the two parishes. This event helped to cushion Seaham from the worst effects of the depression in the 1930's, and thus by 1931 the population had increased to 27,000.

It is rather difficult to gauge the full effect on the population of the depression in the early 1930's, for not only are the 1941 estimated figures of population rather unreliable because of the war, but also there was an extension of Seaham Harbour's boundaries in 1937 to include part of the Easington Rural District. Thus the population graphs give no real indication of population changes at this time, though it seems likely that several thousands were forced to move elsewhere. At the present time, the population is nearly 26,000 which is still a thousand or so below the 1931 figure.

The industrial structure of the population at Seaham is indicated in Table 4. In a total working population of 18,000 men and women, 12,000 are engaged in the manufacturing and extractive industries, and of these over 10,000 are engaged in coal-mining. This represents nearly 90% of all those engaged in the extractive and manufacturing

industries, and demonstrates how dependent Seaham is upon coal. In fact, seven out of every ten male workers in Seaham are employed in the coal-mining industry.



Figs. 36 and 37.

Chapter 16. Industry at Seaham.

Coal is the life-blood of Seaham. The work of seven out of every ten men employed in Seaham is directly connected with coal. 6,255 miners are employed in the Seaham pits and they are responsible for an annual output of about 1,800,000 tons. Of this total, about 1,000,000 tons are produced from the sub-marine coalfield.

Seaham Colliery is the oldest of the local pits, but in its early days it was in fact two pits; Seaton Colliery was sunk in 1845, and was owned by the North Hetton Coal Company; Seaham Colliery was sunk a few years later in 1852. The two pits were amalgamated in 1864, when Seaton Colliery was sold to Lord Londonderry, following legislation which required each pit to have two shafts.* As the pits were only a mere 150 yards apart, it was not a difficult matter to unite them underground.

Dawdon Colliery is the largest of the three local pits; it was sunk in 1907. Vane Tempest is the youngest - sunk in 1928. The numbers employed at the three pits are as

* This legislation came after the Hartley Pit Disaster in 1862 when 204 men and boys lost their lives.

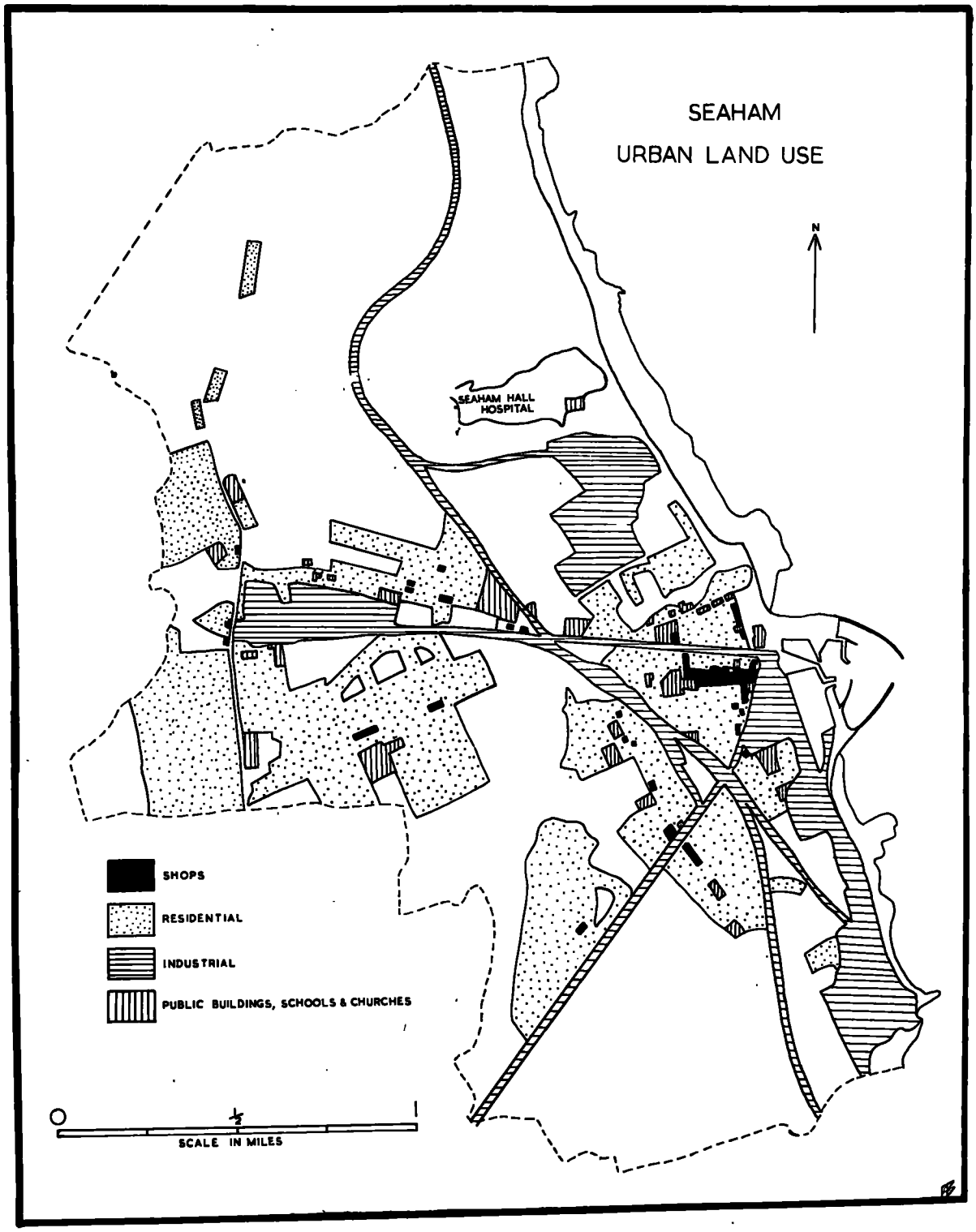

SEAHAM
URBAN LAND USE
N
SEAHAM HALL HOSPITAL
SHOPS
RESIDENTIAL
INDUSTRIAL
PUBLIC BUILDINGS, SCHOOLS & CHURCHES
0
½
1
SCALE IN MILES

Fig. 38.

follows:-

Dawdon	2,764
Vane Tempest	1,837
Seaham	1,654.

There are in Seaham only two factories of any size; both of them are fairly recent arrivals. Crompton and Harrison Ltd., started business in December 1940, originally to make Air Raid Shelters and Ammunition Lockers. Their range of products increased, however, and during the course of the war they fabricated 500 tons of steelwork for the famous Mulberry Harbour, thousands of Bailey Bridge components, Submarine Shaft Brackets, and other war-time necessities. A small ship repairing venture was started in 1941 to meet the needs of Seaham, where there had been no resident repairers for many years. More than 1,500 small ships were handled during the war years, from the smallest of odd jobs to a complete conversion for the North African invasion. This side of the business did not continue after the war.

Since the war, the firm has been involved in a variety of work, including the manufacture of Overhead Cable Hauling Bogies, Pipes and Platforms for a Gas Plant in Wales, tanks

for the bottle-washing industry, Oil Pipe lines, Ship's rudders, and numerous fittings for the National Coal Board and Imperial Chemical Industries Ltd. The chief sources of supply for Steel Plate, Sections, and Tubes are:- Dorman, Long & Co. of Middlesbrough, the Consett Iron Co., Stewarts & Lloyds Ltd. of Glasgow, the South Durham Steel & Iron Co. of West Hartlepool and Middlesbrough, and the Appleby-Frodingham Steel Co. of Scunthorpe. It is significant that none of the steel comes to Seaham by sea, but is brought by road direct to the factory. This is mainly because the quantities used are so small; but in any case, there are no facilities at Seaham for handling imports. The firm employs only about 80 men and boys, and so is quite a small concern.

The other factory in Seaham is a small textile concern established in 1956. This factory is a subsidiary of a Leeds firm, and was established in Seaham mainly because of the availability of female labour of which there is a considerable surplus in this predominantly coal-mining area. The firm makes-up clothes from textiles sent from Leeds, and out of a total labour force of 294, 286 are females.

With the exception of two factories, opportunity for employment other than in the coal-mining industry is extremely rare, there being only a few small concerns and most of these are allied in some way or other to the coal industry.

In the past, however, many other industries have been established in Seaham. Fordyce mentions the following as operating in the 1850's:- anchor manufacturers, brass-founders and finishers, iron founders, engineers, bottle works, pottery, three ship-building yards, sail-makers, ship-chandlers, ship-smiths, block and mast makers etc.(4) Most of these small industries were connected with the wooden-shipbuilding industry and naturally closed down when the coming of iron and steel ships necessitated the moving of the shipbuilding industry to the larger and more suitable ports. But there were also three breweries, a ropery, and a large steam flour mill.

The bottle-works in Seaham were at one time quite a large concern employing over 600 people. The Seaham Bottle Works were opened in 1852, but were later amalgamated with the firm of R. Fenwick & Co. of Sunderland. The Londonderry

Bottle Works were soon taken over by John Candlish & Co. and operated in Seaham from 1852 to 1921. According to an article in "Commerce" of 1898, the works produced about 20,000,000 bottles per annum, many of which were shipped in twice-weekly lots to London. The reason for the dissolution of the firm is said to have been severe competition from Czechoslovakia. The site of the bottle works is now an open derelict space - intended for a Trading Estate.

There have been several attempts to establish the iron industry in Seaham. Sometime between 1856 and 1895 there was an iron-works built at Watsontown - the present site of Dawdon Colliery. It was owned by Watson and Kipling, but could not have prospered long as it is marked 'disused' on a map of 1895. According to Fordyce, writing in 1857, "The Marchioness of Londonderry intends investing a capital of £100,000 in the establishment of iron works at this place, which now possesses remarkable facilities for such a purpose".(4) Blast furnaces were in fact established at Dawdon as the following quotation shows:- "It appears that about the year 1860 her Ladyship proposed to inspect her blast furnaces at Dawdon - a new venture which proved to

be short-lived".(5)

There is also evidence of a Londonderry Engine Works and a Londonderry Wagon Works, and it seems that at one time Seaham was set fair to become an important industrial centre. But, in spite of good quality local coal and plentiful local limestone, and with iron-ore easily available from either Cleveland or abroad, the iron trade has not prospered. There are probably two very good reasons for this. Lacking a navigable river (like Sunderland) or a natural haven (like Hartlepool), it has been impossible to start large-scale iron shipbuilding in the town and consequently there has been no ready-made market for iron and steel as was the case in the Hartlepools for example. But this alone is probably not sufficient to explain the failure of the industry and of more significance is the fact that Seaham was virtually ruled by the Londonderry family and that its fortunes were directly related to the schemes of the head of that family.

It was the third Marquis of Londonderry who was responsible for the building of Seaham Harbour, the building of the Rainton Line, the sinking of Seaham Colliery and many

other noble enterprises. When he died in 1854 the same forceful enterprise was shown by his widow, Lady Frances Anne Londonderry, an 'Industrial Queen' who was described in the following terms by Disraeli in 1861:- "This is a remarkable place (Seaham Hall) and our hostess a remarkable woman. Twenty miles hence she has a palace (Wynyard Hall) in a vast park with forest rides and antlered deer, and all the splendid accessories of feudal life. But she prefers living in a hall on the shores of the German Ocean surrounded by her collieries, and her blast furnaces, and her railroads, and unceasing telegraphs, with a port hewn out of solid rock, screw steamers, and four thousand pitmen under her control.... In the town of Seaham Harbour, a mile off, she has a regular office, a fine stone building with her name and arms in front, and her flag flying above; and here she transacts with her innumerable agents immense business..." When Lady Londonderry died in 1865 there came an end to industrial expansion in Seaham, and it appears that the iron industry passed away at the same time.

There was an attempt to start the chemical industry in the early years of this century, but this project came to

grief sometime before 1914. The firm in question was known as "Electrozone Ltd." and whilst it was in production it manufactured crystals.

It can thus be seen that Seaham has for a long time been dependent upon the coal-mining industry. This "one-industry economy" has caused much concern; the arrival of the two factories on the small trading estate has helped to relieve the position a little, but, in general, the fortunes of Seaham are allied in a unique way with the coal industry.

Chapter 17. Trade at Seaham.

Seaham is purely and simply a coal-exporting port. For the first seventy years after the docks were built, Seaham shipped an average annual total of between 400,000 and 700,000 tons. The opening of the new docks in 1905 made possible an increase in the amount that could be shipped in each year and thereafter the tonnage gradually increased from 1,500,000 tons to 2,000,000 tons in 1913. The 1st World War, the depression that followed it, and Miners' strikes in 1921 and 1926 reduced the total considerably, so that it was not until 1927 that 2 million tons were again shipped through the port. From then on, however, with the exception of the 'depression years' (See Graph Fig. 39) the average tonnage was just over 2 millions and included the best year for shipment (1930) when 2,314,530 tons were cleared.

The 2nd World War interrupted trade, of course, and shipments were reduced to about half of the pre-war total. The war also put a stop to foreign trade and in the years immediately afterwards there was no surplus coal available

for export owing to the pressing needs for fuel in Britain. Shipments since the war have averaged about 1¾ million tons though at the present time they are down to less than 1½ million tons. Coal export to the Continent was resumed in 1948 with the loading of 500 tons of gas coal to Quimper in France, followed by the sending of 1,000 tons to St. Malo; but the proportion of Foreign trade is now very small, with only the occasional shipment to Holland, Denmark and France, and it would seem that the Foreign export trade has virtually disappeared.

The bulk of the coal comes from the National Coal Board No. 2 Area, which includes the Dawdon, Seaham, Vane Tempest, Murton, South Hetton and Hawthorn pits. The class of coal is mainly gas coal, and it goes south to gas works in London, Portsmouth, Poole, Shoreham, Southampton and Exeter, though some house coal goes northwards to the Scottish ports of Aberdeen, Banff, Peterhead, Inverness and to the Orkneys and Shetlands. Before the war, coal exports went from Seaham to the foreign ports of Rouen, Dunkirk, Calais, Dieppe, Antwerp, Copenhagen, Hamburg and to ports in Norway, Sweden, Finland and Italy. The Latvian and Estonian State

Railways also had a regular order for South Hetton coal.

Exports other than coal have been virtually negligible, though at one time the bottle works had a steamer which sailed twice a week between Seaham Harbour and the London warehouse at Rotherhithe. In more recent years however, substantial quantities of Agricultural Lime have been shipped to Scotland, and some cargoes of Spent Oxide and Steel scrap have been shipped to ports in France. In 1959, exports other than coal were:-

Lime	2,242 tons Coastwise.
Spent Oxide	3,014 tons Foreign.
Steel Scrap	945 tons Foreign.

The import trade at Seaham has never been very extensive, but before the last war, timber was imported from Scandinavia mainly for use as pit-props in the local collieries, and the local timber merchant also had occasional shipments. Recently, two cargoes of beech boards were imported from France, but shipments of this kind are very rare and are not likely to expand. When the bottle works were in production there were regular imports of silver sand, chalk, lime, and cullet (broken bottles),

but all that ceased in 1921. It is true to say that there are now no regular imports at all.

Seaham Harbour remains, as it was first intended, a coal-shipping port, with five berths capable of accommodating steamers of up to 4,000 tons burden and facilities capable of handling 3½ million tons of coal per annum.

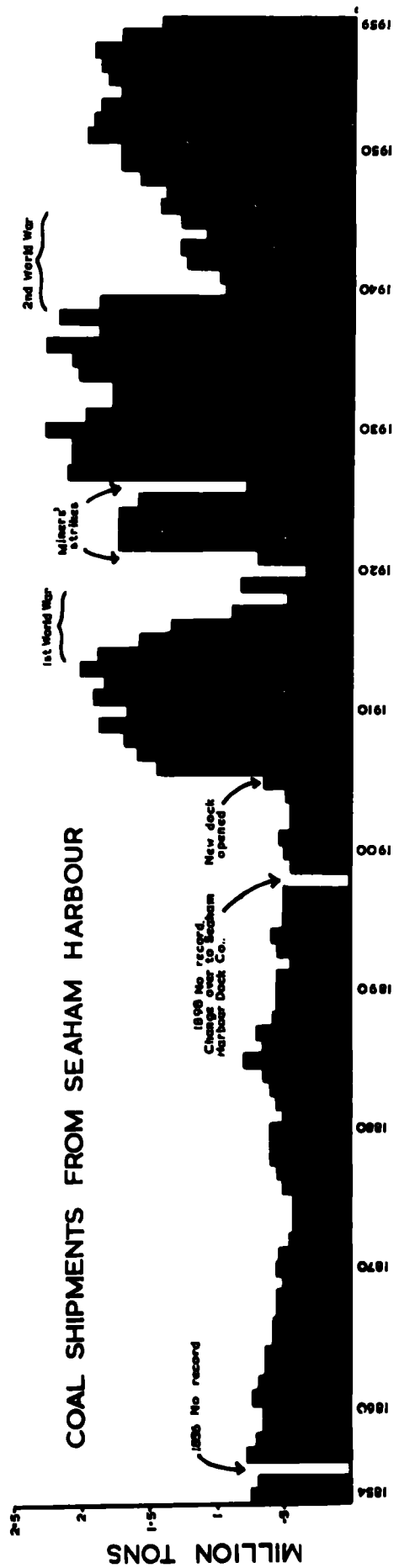

COAL SHIPMENTS FROM SEAHAM HARBOUR
MILLION TONS
2·5
2
1·5
1
·5
1854
1860
1870
1880
1890
1900
1910
1920
1930
1940
1950
1959
1855 No record
1890 No record. Change over to Seaham Harbour Dock Co.
New dock opened
1st World War
Miners' strikes
2nd World War

Fig. 39.

Chapter 18. Seaham's Sphere of Influence.

Seaham has a very small sphere of influence, so small in fact that it hardly merits the name. The map (Fig. 40) is thus deceptive and requires some explanation. The area served by direct bus service is very limited and is not covered by a heavy frequency (See Fig. 41). Indeed, the population in this area can more easily travel to Sunderland for its needs, and Seaham, therefore, quite definitely falls within the larger urban field of Sunderland.

Although the Seaham News appears to have a wide circulation, it must be remembered that it is only a weekly newspaper and has a very small numerical circulation. The fact that it is called "The Seaham News" in no way reflects upon the importance of Seaham within the area, for the paper could quite easily be called "The Murton News" for example; though with three collieries within the boundary, it is true that Seaham has the largest population of all the towns and villages within the circulation area. It is significant that the paper is in fact printed in Durham City!

In a similar manner, the delivery area of the Seaham

and District Laundry is deceptive; with the exception of a bakery, the laundry is the only concern in the town which serves the needs of people outside the town itself, and even then it is by no means the largest or only laundry serving the area shown on the map.

The town has no places of entertainment likely to attract people from outside the area, although an attempt is being made to make the beach and new promenade places of attraction. The Grammar School serves an area wider than Seaham itself, but it should be noted that this is for girls only and that the boys' Grammar School for the Seaham area is at Ryhope.

The urban field is thus very limited and is mainly confined to within the Urban District boundary.

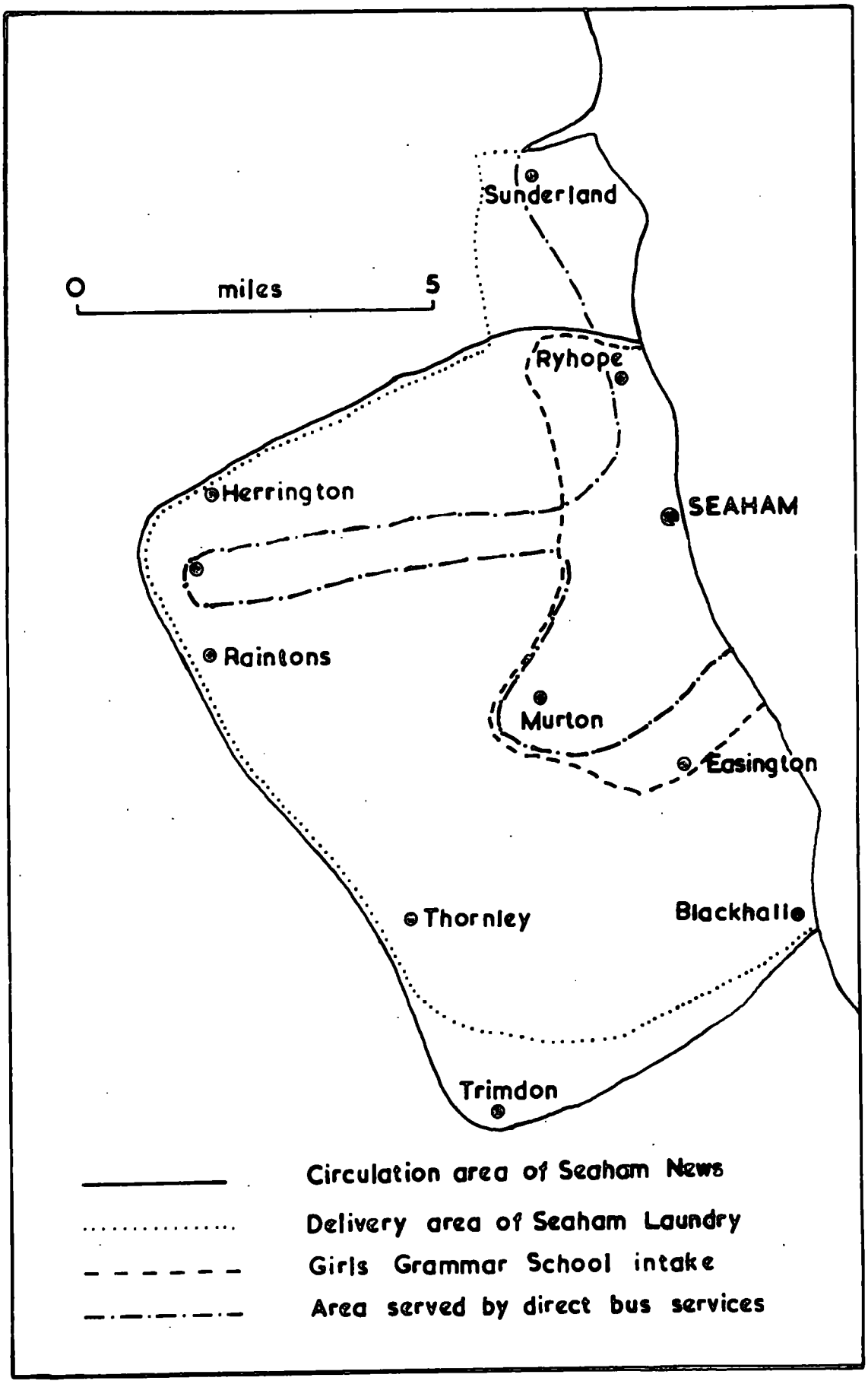


Fig. 40. Seaham's Sphere of Influence.

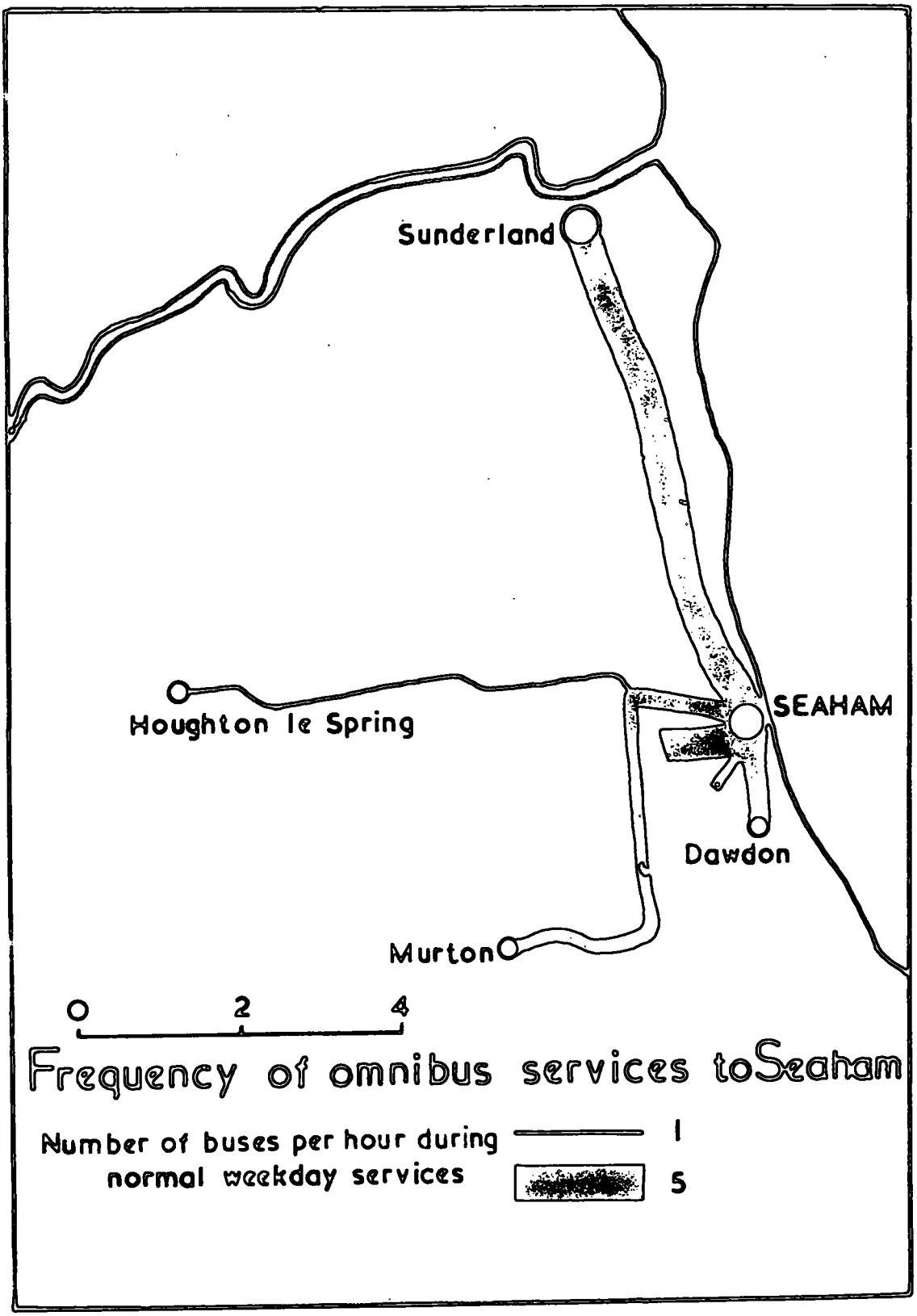

Sunderland
SEAHAM
Houghton le Spring
Dawdon
Murton
0
2
4
Frequency of omnibus services to Seaham
Number of buses per hour during normal weekday services
1
5

Fig. 4I.

References.

1. Memoirs of a Highland Lady. Edited by Lady Strachey. 1898.

2. William Chapman. A description of the Port of Seaham. 1830.

3. T.Y. Hall. Treatise on the Northern Coal Field. 1854.

4. W. Fordyce. The History of Durham. 1857.

5. J.E. McCutcheon. Troubled Seams. 1955.

CONCLUSION.

The primary function of the three ports of Sunderland, Seaham and the Hartlepools is that of an outlet for the East Durham Coalfield. It was H.G.Wells in his "Anticipations"(1900), who pointed out the "fundamental changes in the scale of human relationships and human enterprises brought about by increased facilities of communication," and it would be true to say that much of the prosperity and growth of these ports has been a direct result of the invention and use of new methods of communication. The railways served to link the ports with their hinterlands, whilst sea transport enabled the products of the coalfield to be easily shipped to the markets. At the present time, this primary function is decreasing in importance; the Northumberland and Durham Coalfield, in common with that of South Wales, was at one time one of the major coal-exporting fields of the British Isles. The incidence of two World Wars together with strikes and labour shortages have been responsible for the loss of this trade, and in all three ports coal-shipment facilities lay idle and

appear likely to remain so.

In other respects, however, the three ports have developed differently from each other. Sunderland is a river port and as such offered good facilities for the development of the shipbuilding industry. With the increase in size of vessels Sunderland finds that its confined site is a disadvantage as compared to the larger rivers such as Tyne and Clyde. In spite of valiant attempts to keep up to date in this respect, it would seem likely that the present tendency for the number of shipbuilding firms to decrease will continue and that Sunderland will have to find alternative employment for the men thus made redundant. Local disadvantages, however, are not solely responsible; for the national shipbuilding industry is experiencing difficulty in competing with more efficient yards abroad. Whatever the outcome, Sunderland is at a distinct disadvantage and the industry will almost certainly contract.

At the Hartlepools, the shipbuilding industry prospered for only a short time and has now been reduced to only one yard. Shortage of space has again been the dominant factor in its decline, for at the Hartlepools there is no

river and the ships have to be launched into the docks.

Both ports had a high proportion of their labour forces in the shipbuilding industry and both were severely hit during the depressions of the 'twenties and 'thirties. Although Sunderland and the Hartlepools lost population through migration at this period the position appears to have now been stabilised. The scope of industrial activity has been widened with the introduction of Trading Estates and by other means, and both ports now possess a safer industrial economy; though inevitably a port will be amongst the first to reflect any future recession in world trade.

Unlike Sunderland and the Hartlepools, Seaham is a completely artificial harbour, owing much to the inventiveness of one person - Lord Londonderry. The harbour was designed specifically for sailing ships and is now outdated and at a distinct disadvantage as compared with the other coal-shipping ports. As long as there is a demand for coal, however, especially from the Power Stations in the south of England, the future of Seaham appears to be fairly well assured. The collieries on the eastern side of the coalfield have an average future life of I00 years or so and thus

Seaham will continue to be, as it was first intended, a coal-mining and coal-shipping town. The attempt to establish a flourishing Trading Estate here does not seem likely to succeed except in so far as it finds employment for the surplus female labour which is characteristic of a predominantly coal-mining area.

The relative importance of these three ports has been established in the text, and it seems most unlikely that there will be any changes in this respect in the future. The course of growth of these ports has been traced, and except for a period of prosperity granted to Hartlepool under the Palatinate, Sunderland has maintained its position as the chief port on the seaboard of County Durham. Unless there are any major industrial developments on the north bank of the Tees associated with the chemical industry, the supremacy of Sunderland as the chief port of County Durham seems assured.

The great period of industrial expansion for these ports has now definitely come to an end, and after full recovery from the shocks of economic depression, the future lies ahead in "a spirit of enterprise and determination to keep abreast of the times."

APPENDIX A.

TABLES

APPENDIX A.

Table I. The principal streams of goods traffic flowing in and out of the North East Region by rail*.

TO	TYPE OF TRAFFIC
Lancashire, South and West Yorkshire.	Iron and Steel, Mining and Sawn timber, Heavy chemicals, Ore, and General Goods.
The Midlands.	Iron and Steel, Mining and Sawn timber, Heavy chemicals, Ore, and General Goods.
London and South.	Iron and Steel, Fertilizers, Heavy chemicals, Paper, Glassware, and General Goods.
Scotland.	Iron and Steel, Lime, Fertilizers, Heavy chemicals, and General Goods.
Wales.	Iron and Steel, Heavy chemicals, and General Goods.
Lincolnshire.	Iron and Steel, Slag, Ore, Salt, Fertilizers, and General Goods.
Cumberland.	Coking coal, Timber, Oil, Fertilizers, Heavy chemicals, and General Goods.
FROM	
The Midlands.	Iron Ore, Pig iron, Ale, General Goods.
Lancashire and South and West Yorkshire.	Scrap iron, Grain and flour, Lime, Sugar, and General Goods.
Scotland.	Scrap iron, Potatoes, and General Goods.
London and South.	Scrap iron, Provisions, and General Goods.
Lincolnshire.	Potatoes and General Goods.

*From:- "The North East Coast" - a survey of Industrial facilities compiled by the Research Staff of the Northern Industrial Group.

Table 2. Numbers employed in Extractive and Manufacturing Industries in Sunderland. 1959*

Agriculture and Fishing	202.
Mining and Quarrying	5,719.
Food, Drink and Tobacco	2,790.
Chemicals	327.
Metal Manufacture	1,582.
Engineering and Electrical Goods	7,013.
Shipbuilding and Marine Engineering	14,187.
Vehicles	1,289.
Metal Goods	1,159.
Textiles	831.
Leather and Fur etc.	23.
Clothing and Footwear	3,490.
Bricks etc	2,771.
Timber, Furniture etc	1,604.
Paper, Printing and Publishing	1,494.
Other Manufacturing Industries	140.
Total number of insured workers in Extractive and Manufacturing Industries:	44,621.
Total number of insured workers in Sunderland:	85,460.

*Estimated numbers of insured employees at Sunderland, Southwick and Pallion at June 1959. Statistics for Tables 2,3, and 4 made available by courtesy of the Ministry of Labour.

Table 3. Numbers employed in Extractive and Manufacturing Industries in the Hartlepools 1959.

Agriculture and Fishing	317.
Mining and Quarrying	523.
Food, Drink and Tobacco	774.
Chemicals	482.
Metal Manufacture	3,521.
Engineering and Electrical Goods	2,390.
Shipbuilding and Marine Engineering	5,011.
Vehicles	105.
Metal Goods	1,138.
Textiles	220.
Leather and Fur etc	5.
Clothing and Footwear	1,350.
Bricks etc	65.
Timber, Furniture etc	399.
Paper, Printing and Publishing	893.
Other Manufacturing Industries	107.
Total number of insured workers in Extractive and Manufacturing Industries:	17,300.
Total number of insured workers in the Hartlepools:	37,400.

Table 4. Numbers employed in Extractive and Manufacturing Industries in Seaham. 1959.

Agriculture and Fishing	106.
Mining and Quarrying	10,710.
Food, Drink and Tobacco	492.
Chemicals	193.
Metal Manufacture	90.
Engineering and Electrical Goods	129.
Shipbuilding and Marine Engineering	5.
Vehicles	38.
Textiles	3.
Leather and Fur etc	1.
Clothing and Footwear	294.
Bricks	67.
Timber, Furniture etc	31.
Paper, Printing and Publishing	11.

Total number of insured workers in Extractive and Manufacturing Industries: 12,170.

Total number of insured workers in Seaham: 18,197.

Table 5a. Shipbuilders and Shiprepairers in River Wear and Dock Area.

I) Austin and Pickersgill Ltd.. Wear Dockyard. Principal builders of colliers and also the smaller cargo tramp.

2) Bartram & Sons, Ltd.. Mostly build cargo liners and tramps of up to I8,000 tons d.w.. They are launched into the sea and not into the river.

3) William Doxford & Sons Ltd.. The biggest firm on the river, and the only one that engines its own ships. They are renowned for the 'economy cargo ship', and also build passenger and cargo liners and tankers.

4) Sir James Laing & Sons Ltd.. Specialise in oil tankers of up to 22,000 tons. Also build cargo liners and tramps.

5) Austin and Pickersgill Ltd.(Southwick). Specialise in cargo tramps of up to about I2,000 tons.

6) Short Brothers Ltd.. Builders of cargo vessels, ore-carriers and tankers of up to 22,000 tons d.w.. They have existed on the river for just over I00 years, but are the youngest firm on the river.

7) Joseph L. Thompson & Sons Ltd.. Specialise in tankers of up to 65,000 tons d.w..

8) T.W.Greenwell & Co.Ltd.. Ship and Engine Repairers only. Capable of berthing vessels of 65,000 tons.

Table 5b. Marine Engine Builders and Repairers in River Wear and Dock Area.

I) George Clark(Sunderland) Ltd.. Located at Southwick and South Docks. Mainly build low-powered diesel engines under licence from Sulzer Brothers Ltd. of Switzerland.

2) William Doxford & Sons(Engineers) Ltd.. Located at Pallion and Palmer's Hill Quay. Build turbo- and opposed-piston oil engines.

Table 6. List of ports which imported coal from the Northumberland and Durham Coalfield in the I6th. and I7th. centuries. (From J.U.Nef: "The Rise of the British Coal Industry." I932.

London
Hartlepool
Stockton
Whitby
Scarborough
Bridlington
Hull
Grimsby
Stickney
King's Lynn
Yarmouth
Dunwich
Aldeburgh
Woodbridge
Ipswich
Colchester
Maldon
Southampton
Plymouth
Barnstaple
Bridgewater.

Table 7. Registered Tonnage of Ports in the U.K. in I890.

PORT	No. of vessels	Net tonnage
Liverpool	2,3I3	I,88I,852
London	2,577	I,327,726
Glasgow	I,549	I,224,022
Hartlepools	290	287,738
Newcastle	449	267,5I0
Sunderland	309	242,47I
Greenock	326	23I,900
Hull	835	220,923
Cardiff	298	I6I,436
Belfast	297	I24,426

Table 8. Coal and Coke Shipments from Sunderland.
(Authority: J.U.Nef.) In tons.

Year.	Coastwise.	Oversea.	Total.
1593-4		1,280	
1608-9	9,265	2,383	11,648
1611-12	21,342		
1615-16	23,936	3,545	27,477
1618-19		2,603	
1621-2	23,575		
1622-3	25,144		
1623-4	26.273		
1626	30,583	2,804	33,387
1632-3		8,458	
1633-4	61,307	7,826	69,133
1636-7		6,796	
1638-9		11,921	
1639-40		9,253	
1657-8	68,578	5,582	74,160
1658-9	112,840	7,407	120,247
1659-60	101,702	28,714	130,416
1660-1		3,817	
1665-6		304	
1666-7		1,326	
1673-4	116,009	8,122	124,131
1674-5		13,889	
1675-6	104,286	11,148	115,434
1676-7		13,010	
1677-8	142,999	7,996	150,995
1678-9	124,569		
1679-80		13,905	
1684-5	141,280	22,139	163,419
1732-3	274,294	51,768	326,083

Table 8. continued.
(Authority: G. Garbutt)

Year.	Total.(tons)	Year.	Total.(tons)
1748	390,618	1770	566,159
1749	359,195	1771	580,364
1750	430,034	1772	672,847
1751	351,561	1773	700,215
1752	469,198	1774	621,592
1753	443,190	1775	757,722
1754	439,290	1776	705,661
1755	461,537	1777	682,278
1756	464,073	1778	670,169
1757	474,188	1779	614,447
1758	496,191	1780	618,815
1759	494,705	1781	565,913
1760	478,269	1782	524,589
1761	449,467	1783	595,481
1762	454,586	1784	577,741
1763	482,729	1785	677,104
1764	544,502	1786	719,534
1765	540,009	1787	703,734
1766	544,758	1788	743,605
1767	509,503	1789	713,481
1768	537,224	1790	789,904
1769	563,753	1791	821,415

Table 8. continued.
(Authority: G. Garbutt)

Year.	Coastwise.	Oversea.	Total.(tons)
1792	546,338	141,274	687,612
1793	673,553	156,519	830,072
1794	644,119	103,045	747,164
1795	747,729	15,592	763,321
1796	661,859	16,676	678,535
1797	731,106	17,050	748,155
1798	725,157	13,544	738,701
1799	769,433	10,703	780,136
1800	791,918	12,248	804,166
1801	612,198	12,606	624,804
1802	808,449	82,693	891,142
1803	792,209	26,942	819,151
1804	793,813	11,029	804,842
1805	829,470	15,781	845,251
1806	811,618	6,924	818,542
1807	765,688	11,331	777,019
1808	923,851	5,374	929,225
1809	858,944	2,581	861,525
1810	982,387	5,078	987,465
1811	876,996	4,582	881,578
1812	902,993	12,435	915,428
1813	920,212	4,714	924,926
1814	989,091	29,227	1,018,318
1815	895,443	46,839	942,282
1816	1,027,370	37,444	1,064,814
1817	964,250	32,611	996,861
1818	1,031,788	41,971	1,073,759

No records found.

Table 8. continued. (Authority: River Wear Commissioners)

Year.	Total.(tons)	Year.	Total.(tons)
1820	1,115,812	1853	1,838,867
1821	1,036,441	1854	1,871,353
1822	1,047,462	1855	1,890,926
1823	1,276,735	1856	2,204,898
1824	1,263,769	1857	2,483,116
1825	1,330,414	1858	2,560,105
1826	1,373,455	1859	2,606,513
1827	1,308,225	1860	2,979,468
1828	1,326,593	1861	3,108,462
1829	1,497,059	1862	3,151,027
1830	1,387,426	1863	3,081,166
1831	1,255,896	1864	3,013,001
1832	1,203,802	1865	3,035,921
1833	1,349,058	1866	2,982,983
1834	1,111,760	1867	3,130,794
1835	1,088,829	1868	3,197,879
1836	1,155,414	1869	3,074,705
1837	1,331,438	1870	3,227,127
1838	1,277,549	1871	3,380,860
1839	1,282,486	1872	3,128,880
1840	1,318,497	1873	2,952,538
1841	1,348,980	1874	2,914,660
1842	1,242,051	1875	3,298,071
1843	1,194,723	1876	3,440,460
1844	1,045,351	1877	3,409,944
1845	1,414,339	1878	3,349,150
1846	1,381,262	1879	3,276,744
1847	1,621,303	1880	3,573,483
1848	1,662,695	1881	3,604,325
1849	1,519,354	1882	3,700,240
1850	1,718,427	1883	3,958,564
1851	1,643,024	1884	3,789,481
1852	1,789,795	1885	3,981,700

Table 8. continued. (Authority: River Wear Commissioners)

Year.	Total.(tons)	Year.	Total.(tons)
1886	3,945,434	1919	2,721,425
1887	4,261,292	1920	3,286,476
1888	4,190,726	1921	3,001,871
1889	4,122,509	1922	5,080,794
1890	3,740,330	1923	5,391,499
1891	3,729,222	1924	5,227,207
1892	3,127,587	1925	5,075,290
1893	4,031,025	1926	2,169,280
1894	4,402,807	1927	5,498,179
1895	4,226,382	1928	5,393,507
1896	4,406,856	1929	5,165,847
1897	4,408,901	1930	4,837,409
1898	4,502,755	1931	4,905,550
1899	4,341,050	1932	4,532,782
1900	4,262,095	1933	4,705,549
1901	4,257,337	1934	3,995,813
1902	4,479,596	1935	3,814,531
1903	4,741,484	1936	4,013,289
1904	5,117,230	1937	4,854,952
1905	4,924,077	1938	4,449,719
1906	4,276,881	1939	4,305,971
1907	4,396,932	1940	2,743,100
1908	4,235,367	1941	2,168,083
1909	4,466,171	1942	2,391,805
1910	4,291,986	1943	2,090,035
1911	4,823,365	1944	2,108,816
1912	4,453,262	1945	2,143,359
1913	4,857,661	1946	2,304,886
1914	4,074,589	1947	2,491,869
1915	3,505,382	1948	2,790,693
1916	3,144,185	1949	2,945,219
1917	2,101,377	1950	3,031,673
1918	2,062,061	1951	3,045,704

Table 8. continued.

(Authority: River Wear Commissioners)

Year.	Total.(tons)	Year.	Total.(tons)
1952	3,186,705	1956	2,876,514
1953	3,258,183	1957	2,568,059
1954	3,258,686	1958	2,318,033
1955	2,889,601	1959	2,197,863

Table 9. Launch and Tonnage Totals on the River Wear.

Year.	No. of Ships.	Gross Tonnage.	Average tons.
1790	19	2,736	144
1791	6	1,212	202
1804	51	8,313	163
1805	36	5,868	163
1835	98	26,000	265
1836	110	27,000	245
1837	128	32,000	250
1838	180	43,000	239
1839	248	60,000	242
1840	251	64,446	257
1841	141	40,000	284
1842	107	26,000	243
1843	85	20,000	235
1844	100	27,000	270
1845	130	38,000	292
1846	131	42,000	320
1847	148	48,000	324
1848	142	38,000	267
1849	150	44,000	293
1850	158	50,000	316
1851	146	51,823	254
1852	142	56,645	392
1853	152	68,479	454
1854	151	66,929	443
1855	151	61,159	405
1856	154	63,049	409

* Figures derived from J.W. Smith & T.S. Holden. Where Ships are Born. 1953. Also from The Wear Shipbuilders Assoc.

Table 9. continued.

Year.	No. of Ships.	Gross Tonnage.	Average tons.
1857	143	54,780	383
1858	110	42,003	382
1859	100	37,184	372
1860	112	40,201	359
1861	126	46,778	371
1862	160	56,921	355
1863	171	70,040	410
1864	153	71,987	470
1865	172	73,134	423
1866	145	62,719	432
1867	128	52,249	401
1868	131	70,302	509
1869	122	72,420	585
1870	103	70,084	686
1871	79	81,903	844
1872	122	134,825	1,080
1873	95	99,371	1,046
1874	88	88,022	1,000
1875	91	79,904	876
1876	60	54,041	900
1877	75	87,587	1,167
1878	89	112,602	1,265
1879	60	87,432	1,457
1880	71	108,626	1,529
1881	79	130,862	1,650
1882	109	183,350	1,682
1883	128	212,313	1,685
1884	70	99,597	1,422
1885	46	61,761	1,342
1886	39	56,699	1,448
1887	47	84,254	1,813
1888	75	142,508	1,898

Table 9. continued.

Year.	No. of Ships.	Gross Tonnage.	Average tons.
1889	102	217,383	2,131
1890	87	194,307	2,228
1891	87	188,715	2,169
1892	76	190,775	2,510
1893	48	118,007	2,458
1894	70	166,484	2,378
1895	56	126,384	2,257
1896	83	215,887	2,601
1897	64	181,298	2,832
1898	84	259,443	3,089
1899	73	257,733	3,530
1900	70	267,034	4,481
1901	77	295,509	3,387
1902	67	251,149	3,833
1903	60	206,027	3,363
1904	73	247,220	3,748
1905	95	342,747	3,608
1906	99	365,951	3,695
1907	91	314,320	3,454
1908	40	92,022	2,301
1909	57	141,676	2,485
1910	68	185,499	3,198
1911	86	321,348	3,737
1912	82	346,009	4,220
1913	79	341,598	4,324
1914	74	319,225	4,314
1915	31	111,329	3,591
1916	39	159,560	4,091
1917	51	209,809	4,114
1918	60	267,757	4,463
1919	63	288,662	4,582
1920	67	333,335	4,975

Table 9. continued.

Year.	No. of Ships.	Gross Tonnage.	Average tons.
1921	30	153,710	5,124
1922	27	130,961	4,850
1923	17	56,522	3,325
1924	56	207,796	3,746
1925	23	103,247	4,329
1926	8	36,979	4,489
1927	37	160,894	4,294
1928	50	207,676	4,153
1939	58	243,924	4,205
1930	40	175,507	4,387
1931	7	8,814	1,259
1932	2	2,628	1,314
1933	5	11,598	2,319
1934	8	19,210	2,402
1935	8	31,396	3,924
1936	36	138,791	3,855
1937	38	155,700	4,097
1938	35	169,898	4,850
1939	24	122,745	5,114
1940	41	206,181	5,029
1941	54	352,380	6,526
1942	58	374,794	6,462
1943	47	299,542	6,373
1944	40	258,142	6,453
1945	48	218,175	4,545
1946	39	192,499	4,936
1947	41	194,114	4,659
1948	38	177,874	4,681
1949	37	181,542	4,907
1950	34	192,175	5,652

Table 9. continued.

Year.	No. of Ships.	Gross Tonnage.	Average tons.
1951	28	197,920	7,068
1952	26	170,493	6,557
1953	27	193,106	7,152
1954	26	192,483	7,403
1955	29	223,031	7,691
1956	29	216,784	7,475
1957	28	213,313	7,975
1958	30	269,558	8,985
1959	28	249,224	8,901
1960	25	209,643	8,385

Table IO. List of imports into Sunderland in I776.

(From: W.Hutchinson, "History of Durham" I794)

Flax	I65 tons.
Wainscot boards	
Duck bolts	
Brandy	6I3 gallons
Geneva	99 gallons
Millstones	3
Pantiles	
Narrow Holland Linen	
Old iron	I2 tons
Hoops for coopers	
Deals	
Battons	
Pailing boards	
Balks	
Pipe staves	
Handspikes	
Capraven	
Wainscot	
Lath wood	
Clapboard	
Oak plank	
Wine	65 gallons
Spars	
Oak timber	
Russia duck	
Hemp	
Smalts	
Spruce beer	
Masts	
Carraway seed	
Fire wood	
Oars	
Books	
German linen	
Open tapes	
Toys	
Fir timber	

Table II. List of imports and exports at Sunderland in 1772.
(From: W.Hutchinson, "History of Durham" 1794)

EXPORTS

Coals to Holland, Germany, France and Russia		27,438 chaldrons.
Copperas	376 tons	
Stockings	177 dozen	
Earthenware	153 crates	
Green glass bottles	6,584	
Grindstones		
Hops		
Firestone		
Mats of tow		
Dried fish		
Organs		
Anchors		
Oakum		
Sailcloth		
Lint		
Indian silk.		

IMPORTS

From Holland:	Flax, Wainscot, Geneva, Brandy, Olives and Sailcloth.
From Norway:	Deals, Battens, Pailing boards, Balks, Fir timber, Spars, Oak, Handspikes, Tar, Capravens, Firewood and Oars.
From Sweden:	Deals, Battens, Iron(91 tons), and Flax.
From Germany:	Oak.

Table I2. Imports and Exports of the Port of Sunderland for the year ending January I8I9.

(From: George Garbutt "The History of Sunderland" I8I9.)

EXPORTS

(being chargeable with duty)

TO	
Russia:	Lamp black, white salt, salammoniac, earthenware, kaleidoscopes, paints.
Sweden:	Lamp black, white salt.
Norway:	Cordage, earthenware, lamp black, glass, tobacco pipes, woollen cloth, grindstones, leather clogs, felt hats, mustard, lead, white lead, hardware, tow.
Denmark:	Flint glass, brown glass, glass bottles, earthenware, grindstones.
Prussia:	Grindstones, whetstones, copperas, hardware, earthenware, crown glass.
Germany:	Earthenware, glass, grindstones, lamp black.
Holland:	Earthenware, glass, grindstones, clothing, lamp black, copperas, coal tar, guns.
Flanders:	Copperas.
Portugal:	Lamp black, glass bottles.
Gibraltar:	Glass, hardware, copperas.
Guernsey:	Earthenware.
Jersey:	Earthenware, glass.
British Northern Colonies:	Earthenware, glass, clothing, grindstones, mustard, copperas, lead shot, hardware, copper, iron, stationary.
United States:	Glass, grindstones, mustard, hardware, lamp black, tinware.

Table I2 continued.

IMPORTS

From

Russia:	Hemp, fir timber, masts, deals, oars, tar, hand-spikes, firewood, lathwood, matts, hessian canvas, bristles, spars.
Norway:	Fir timber, oak, deals, battens, spars, masts, oars, oak bark, birch bark, calf and goat skins.
Denmark:	Oak bark, oats, barley.
Germany:	Oak, oak bark, packing canvas, mats, oats, barley, wheat.
Holland:	Oak, wainscot logs, Geneva, flax, apples, pears, onions, hay, butter, linseed cakes, oats, wheat.
Portugal:	Wine.
Flanders:	Oats.
Jersey:	Apples, pears.
British Northern Colonies:	Birch, maple, oak, fir, elm, masts, spars, deals, staves, oars etc..

Table I3. Exports from Sunderland, with values, from October I853 to July I854 inclusive.
(From: Fordyce "History of Durham" I857)

Value in £'s.

Bar iron	33,026	One boat	40
Sundry iron	29,I97	Sulphate of Copper	30
Earthenware	I0,I35	Matches	30
Railway iron	5,500	Iron safe	30
Anchors	2,542	Iron bolts	27
Railway carriages	2,000	Lamp black	23
Plate iron	I,445	Salamoniac	20
Iron rails	I,440	Flint glass	20
Chains	I,025	Clay pipes	20
Alkali	540	Soda	I7
Sailcloth	533	Tar	I7
Crown glass	422	Ale	I6
Hoop iron	420	Fire-tiles	I5
Flint	397	Bolt iron	I3
Pig iron	392	China-stone	II
Fire-bricks	263	Shakes	I0
Rod-iron	260	Coloured lead	I0
Glass bottles	244	Plaster of Paris	I0
Railway keys of wood	200	Lead	I0
Metal pipes	200	Window glass	9
Sheet iron	I97	Linseed oil	9
Plate glass	I70	Fire clay	6
Lead pipe	I50	Porter	4
Copperas	I45	Litharge	3
Grindstones	I36	Wire	3
Wine	I25	White lead	2
Acetic acid	I20	Venetian red	I
Antimony	90	Mustard	I
Tin plates	80	Blacking powder	I
Pottery clay	63	Ochre	I
Wood shovels	60	Spanish brown	I
Wearing apparel	55	Sheet lead	I
Brandy	53	Paint	I
Potash	50	Resin	I

Year	Timber	Props	Iron & Steel	Iron Ore	Grain	Esparto	Iron & Steel Scrap	Petro-leum in bulk	Cement	Wood Pulp	Sun-dries	TOTAL
	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons
1918	10,895	4,079	3,851	68,809	31,688	1,056	.....	7,063	3,120	.....	3,083	133,644
1919	33,834	35,000	2,684	100,966	20,293	10,056	.....	24,288	3,129	5,819	5,011	241,080
1920	31,715	19,702	3,623	224,403	43,757	17,509	.....	28,527	6,720	11,353	14,554	401,863
1921	14,745	22,585	818	59,815	36,896	5,717	.....	36,848	3,775	1,307	8,955	191,461
1922	29,306	40,242	398	23,824	28,431	17,414	.....	26,931	5,348	3,442	15,983	191,319
1923	25,959	75,918	360	26,607	37,557	19,721	.....	34,376	9,408	2,871	17,846	250,623
1924	48,588	54,756	1,099	51,284	29,612	20,488	.....	45,625	13,052	3,137	28,038	295,679
1925	26,210	45,772	2,457	67,530	28,281	22,400	.....	43,360	13,586	3,828	20,640	274,064
1926	22,217	30,655	15	15,728	26,340	18,500	.....	54,882	9,438	1,188	70,937	249,900
1927	30,497	33,156	8,162	109,841	21,303	24,783	.....	69,125	15,211	3,198	53,795	369,071
1928	30,853	68,914	7,529	133,970	22,420	26,011	.....	73,405	12,403	4,656	39,886	420,047
1929	33,934	81,118	16,662	57,384	25,813	20,811	.....	88,001	13,061	6,176	44,628	387,588
1930	30,765	75,633	14,227	79,754	10,427	16,978	.....	86,371	15,023	5,562	43,391	378,131
1931	15,591	61,730	7,330	17,085	10,121	18,602	.....	87,620	21,923	3,775	68,168	311,945
1932	17,520	71,891	2,974	6,602	5,245	19,370	.....	65,648	17,060	5,447	60,602	272,359
1933	19,804	84,573	79	9,627	14,620	20,259	.....	79,373	17,102	9,413	41,447	296,297
1934	27,007	104,680	251	34,725	11,135	21,473	.....	80,145	17,268	5,036	30,618	332,338
1935	21,641	111,029	877	39,887	10,766	23,888	.....	90,743	17,868	6,674	28,696	352,069
1936	28,065	71,482	3,879	52,227	15,495	24,680	.....	74,441	18,416	6,715	36,210	331,610
1937	27,336	95,922	5,529	122,836	20,599	24,952	.....	80,295	21,726	7,199	41,034	447,428
1938	18,102	62,040	2,943	54,318	11,859	23,007	6,901	79,332	35,460	5,646	25,923	325,531
1939	24,146	56,452	913	27,001	584	17,821	531	54,589	35,777	7,736	26,553	252,103
1940	12,749	26,321	2,568	17,075	18,344	903	.....	11,550	32,409	1,009	8,762	131,690
						Flour						
1941	5,097	8,090	1,799	7,396	11,743	9,574	1,525	14,292	15,037	.....	5,836	80,389
1942	8,205	1,000	6,987	13,696	3,247	3,658	5,502	21,630	12,800	.....	13,261	89,986
1943	17,053	892	10,041	33,680	13,226	.....	.....	14,617	10,761	.....	16,721	116,991
1944	159	.....	1,107	25,447	11,566	344	.....	11,502	3,370	.....	64,753	118,248
1945	8,923	14,283	.....	6,691	13,087	2,300	.....	14,543	.....	1,879	17,283	78,989
1946	7,309	28,486	.....	82,942	6,690	Esparto	2,803	39,123	22,307	699	29,286	219,645
1947	30,452	31,945	.....	144,509	13,616	6,198	6,144	90,317	40,010	1,750	42,036	406,977
1948	22,803	17,682	.....	178,844	29,045	16,203	1,158	85,829	17,204	2,894	36,089	407,751
1949	12,191	35,930	.....	129,099	19,232	15,875	15,083	119,101	22,301	2,293	46,183	417,288
1950	3,377	17,942	.....	121,086	10,827	15,648	47,794	136,801	20,605	2,813	52,193	429,086
1951	6,938	19,547	.....	182,391	26,476	14,039	10,215	169,641	35,479	3,885	44,136	512,747
1952	2,528	39,065	.....	227,854	13,152	10,331	2,485	174,913	54,803	4,726	33,469	563,326
1953	3,681	18,256	.....	211,810	18,961	12,039	1,769	182,862	69,162	4,723	35,937	559,200
1954	9,741	16,605	.....	.....	.....	14,322	11,479	172,071	63,900	6,700	36,144	330,962
1955	13,732	8,716	23,740	.....	.....	14,111	200,761	178,523	54,652	6,634	107,279	608,148
1956	12,827	11,433	5,051	.....	.....	6,869	214,769	194,769	52,293	6,074	72,579	576,664
1957	12,223	14,613	3,904	.....	.....	10,584	177,557	169,252	52,370	6,336	50,193	497,032
1958	6,953	1,558	2,750	.....	.....	8,503	11,383	185,807	50,434	9,959	48,062	325,409
1959	8,575	2,894	.....	.....	.....	11,629	.....	216,561	53,900	7,109	43,609	344,277

Table I4. Imports into Sunderland 1914-59.

Year	Bottles & Glass	Iron and Steel	Machinery	Pitch and Tar	Creosote Oil	Petroleum & Benzole	Boxings	Binder Twine	Paper	Pit Props	Sundries	TOTAL
	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons
1918	.....	.....	23,232	7,621	1,118	.....	.....	.....	.....	.....	.....	31,971
1919	.....	354	20,531	11,599	2,506	3,632	.....	.....	.....	.....	.....	38,622
1920	.....	.....	17,700	2,658	2,468	4,396	.....	.....	.....	.....	129	27,351
1921	.....	.....	11,927	10,662	3,005	5,253	373	.....	.....	.....	118	31,338
1922	290	1,367	9,998	8,660	4,122	2,033	1,641	1,665	865	.....	.....	30,641
1923	126	877	3,330	5,221	8,022	2,004	1.164	1,539	938	.....	440	23,661
1924	358	227	14,269	2,754	6,553	24	1,629	2,525	2,096	.....	148	30,583
1925	389	456	7,050	9,149	4,002	530	3,593	2,037	1,000	.....	2,005	30,211
1926	202	2,053	4,111	10,533	2,503	1,608	2,989	1,426	691	.....	950	27,066
1927	158	5,204	13,329	3,900	7,465	2,143	653	2,080	.....	402	789	36,123
1928	196	3,228	18,780	3,599	4,502	20,743	175	1,370	574	2,101	301	55,569
1929	266	4,644	14,700	2,592	2,770	22,108	.....	1,462	2,525	2,081	1,630	54,778
1930	817	3,183	16,866	17,401	10,148	27,080	193	1,376	1,849	3,161	1,916	83,990
1931	792	2,853	3,191	21,470	3,015	24,108	.....	1,231	2,322	2,648	971	62,601
1932	531	1,518	1,059	11,335	6,229	18,353	.....	1,225	1,775	5,070	2,004	49,099
1933	338	1,783	1,432	10,864	3,335	14,041	.....	2,006	1,608	6,287	691	42,385
1934	125	696	2,029	15,516	5,987	9,621	.....	2,048	642	6,559	970	44,193
1935	.....	.....	3,077	10,671	5,236	17,218	.....	1,877	.....	5,631	685	44,395
1936	23	2,380	11,079	5,744	2,394	20,185	Grain	1,583	376	5,806	1,366	50,936
1937	18	10,332	11,456	17,562	6,268	25,352		1,506	404	5,403	771	79,072
1938	52	5,601	12,211	16,325	5,302	26,108	.....	1,586	367	5,105	1,839	74,496
1939	156	7,115	8,811	7,935	3,177	15,046	.....	1,789	170	5,385	956	50,540
1940	1	91	15,440	11,974	501	12,206	6,970	636	.....	.....	945	48,764
	Timber									Lime-stone		
1941	.....	.....	17,690	1,006	.....	580	2,285	.....	.....	.....	23,999	45,560
1942	2,988	.....	17,785	3,211	.....	6,634	3,247	.....	.....	.....	52,998	86,863
1943	.....	.....	18,740	8,791	.....	8,202	1,773	.....	.....	.....	65,574	103,080
1944	155	.....	14,417	.....	.....	10,630	4,256	.....	.....	.....	135,218	164,676
1945	.....	.....	15,817	3,937	.....	13,692	2,759	.....	.....	.....	236,304	272,509
1946	754	.....	12,525	7,322	499	14,212	742	.....	.....	.....	40,559	76,613
1947	.....	110	8,469	8,832	3,001	21,227	1,046	.....	.....	.....	10,139	52,824
1948	.....	62	12,892	5,230	2,496	18,623	11,779	.....	.....	.....	10,549	61,631
1949	.....	.....	10,903	6,791	2,998	22,987	4,916	.....	.....	.....	8,756	57,351
1950	.....	.....	11,118	3,177	.....	47,145	8,774	.....	.....	.....	5,515	75,729
1951	.....	.....	8,179	.....	.....	74,513	6,623	.....	.....	.....	10,413	99,728
1952	.....	.....	9,324	.....	.....	61,838	7,214	.....	.....	.....	11,908	90,284
1953	.....	.....	12,494	.....	.....	53,172	1,090	.....	.....	.....	9,356	76,112
1954	.....	.....	9,864	.....	.....	38,477	7,544	.....	.....	.....	7,527	63,412
1955	.....	.....	12,519	.....	.....	46,233	.....	.....	.....	.....	2,966	61,718
1956	.....	.....	13,131	.....	.....	41,216	.....	.....	.....	.....	1,915	56,262
1957	.....	.....	13,093	.....	.....	40,516	.....	.....	.....	3,401	1,778	58,788
1958	.....	.....	15,707	.....	.....	38,664	.....	.....	.....	19,449	2,926	76,746
1959	.....	.....	15,053	.....	.....	27,356	.....	446	.....	23,111	7,662	73,628

Table I5. Exports from Sunderland 1914-59.

Table 16. Coal shipments from the Hartlepools.(in tons)

1850	1,505,924
1851	1,444,882
1852	1,674,621
1853	1,704,244
1854	1,646,627
1855	1,598,042
1856	1,621,886
1857	1,591,629
1858	1,741,657
1859	1,809,155
1860	1,887,726
1861	2,042,128
1862	1,920,332
1863	1,829,496
1864	1,717,277
1865	1,584,422
1866	1,518,864
1867	1,539,102
1868	1,519,504
1869	1,453,125
1870	1,490,715
1871	1,431,889
1872	1,070,136
1873	1,003,887
1874	1,136,969
1875	1,479,305
1876	1,535,846
1877	1,463,521
1878	1,307,013
1879	1,254,287
1880	1,248,926
1881	1,295,719
1882	1,190,542
1883	1,213,506
1884	1,262,975
1885	1,215,089
1886	1,243,043
1887	1,286,933
1888	1,241,064
1889	1,101,879
1890	1,042,352
1891	1,067,746
1892	843,679
1893	1,153,417
1894	1,431,677
1895	1,276,904
1896	1,259,068
1897	1,213,606
1898	1,273,109

Table 17.

Exports of General Goods(in tons)

	61,496
	61,577
	51,864
	46,682
	72,348
	41,879
	29,103
	48,319
	76,558
	105,589
	135,460
	128,655
	105,214
	76,040
	84,453
	48,754
	48,347
	52,487
	58,052
	83,596
	94,771
	134,000
	110,390
	78,553
	78,823
	78,604
	111,408
	99,602
	113,939
	131,907
	102,429
	91,246
	115,637
	119,818
	98,706
	105,074
	116,634
	88,706

continued overleaf.

Tables 16 and 17 continued.

	Coal.	General Goods.	
1899	1,247,512	83,795	
1900	1,208,756	84,535	
1901	1,217,411	43,868	
1902	1,270,108	63,875	
1903	1,418,287	82,959	
1904	1,652,463	41,990	
1905	1,611,068	40,560	
1906	1,794,425	46,697	
1907	1,996,959	48,350	
1908	2,154,214	50,088	
1909	2,353,906	39,900	
1910	1,887,908	39,020	
1911	2,266,410	40,121	
1912	2,188,133	41,959	
1913	2,400,571	44,306	
1914-1918	1st. World War.	No records available.	
1919	1,283,894	9,113	
1920	1,550,942	18,570	
1921	1,344,420	8,991	Miners' Strike.
1922	2,233,461	26,492	
1923	2,133,659	7,218	
1924	2,058,489	5,955	
1925	2,090,048	4,588	
1926	843,536	7,952	
1927	2,658,243	8,634	
1928	3,265,243.	5,486	
1929	3,447,676	18,225	
1930	3,251,444	24,303	
1931	3,188,769	11,044	
1932	3,167,143	9,528	
1933	3,187,119	9,356	
1934	3,315,246	1,835	
1935	3m435,801	4,493	
1936	3,143,073	8,134	
1937	3,355,905	13,975	
1938	3,008,041	13,575	
1939	3,196,484	16,523	
1940-45	2nd. World War.	No records available	

Tables 16 and 17 continued.

	Coal	General Goods.
1946	1,541,300	14,164
1947	1,790,439	9,704
1948	2,088,703	11,684
1949	2,142,099	2,263
1950	2,195,705	13,678
1951	2,123,007	7,918
1952	2,020,000	51,722
1953	1,926,595	120,081
1954	1,900,158	84,813
1955	1,703,599	184,657
1956	2,035,690	
1957	1,994,667	
1958	1,987,554	
1959	1,700,394	

Table I8. Vessels launched by William Gray & Co.Ltd..

Year	No. of Ships	Gross Tonnage
I9I3	I9	89,560
I9I4	I6	70,065
I9I5	I6	56,563
I9I6	8	27,I60
I9I7	I0	4I,358
I9I8	22	86,6I5
I9I9	I5	63,705
I920	I2	56,I05
I92I	5	36,977
I922	7	38,624
I923	8	47,872
I924	II	50,664
I925	I3	63,337
I926	4	I8,I64
I927	I4	70,25I
I928	I6	74,879
I929	I9	86,398
I930	I9	65,779
I93I	I	I,977
I932	6	26,4I3
I933	I	5,498
I934	2	I,I00
I935	2	I0,277
I936	8	35,64I
I937	I0	39,774
I938	I2	48,653
I939	7	29,6I4
I940	II	5I,I97
I94I	I5	70,077
I942	I8	85,070
I943	I7	82,579
I944	I3	6I,768
I945	I2	60,I09
I946	9	32,993
I947	9	32,I69
I948	I4	47,3I3
I949	II	45,07I
I950	7	34,265
I95I	9	47,4I2
I952	7	40,322
I953	8	40,665
I954	7	46,II8
I955	5	27,509
I956	6	37,I84
I957	5	33,328
I958	5	42,350
I959	4	25,463
I960	3 +	32,777

2 barges.

Table 19. Imports into the Hartlepools.

(Figures supplied by the Docks and Inland Waterways Executive)

Year	Grain(Quarters)	General(Tons)	Timber(Loads)
1852	16,150	5,786	531
1853	83,010	9,474	1,234
1854	121,772	13,820	4,536
1855	93,008	17,548	8,982
1856	120,595	19,794	15,389
1857	190,263	23,080	14,297
1858	95,914	22,031	33,456
1859	162,007	25,030	57,661
1860	257,908	25,328	74,297
1861	204,724	33,529	57,250
1862	179,889	19,432	85,724
1863	180,473	39,892	121,625
1864	180,625	51,969	136,005
1865	254,714	45,402	155,869
1866	274,736	29,315	187,533
1867	269,214	27,812	161,232
1868	209,059	32,307	202,713
1869	212,754	36,812	231,139
1870	230,356	39,650	243,843
1871	167,134	44,135	270,901
1872	350,653	63,886	271,533
1873	315,832	50,606	300,205
1874	329,417	46,172	344,095
1875	305,077	49,035	322,462
1876	255,211	54,184	418,917
1877	204,150	57,396	345,936
1878	264,162	61,466	269,336
1879	239,294	70,586	193,724
1880	281,131	69,303	326,278
1881	256,509	82,087	249,913
1882	191,657	78,971	332,260
1883	198,990	95,451	327,234
1884	114,694	119,442	308,104

Continued overleaf.

Grain: One Quarter = 8 bushels = 480 lbs..
Timber: One Load = 50 cubic feet of squared timber.

Table I9 continued.

Year	Grain (Quarters)	General (Tons)	Chalk & Gravel (Tons)	Iron Ore (Tons)	Timber (Loads)
I885	I33,057	50,8I3		59,227	279,I75
I886	I38,I54	44,300		75,909	237,548
I887	209,384	47,3I6		II3,958	248,459
I888	III,57I	55,309		I06,092	337,378
I889	I35,I03	65,602		I97,488	398,992
I890	82,I64	54,360		I69,960	395,56I
I89I	I05,520	63,I0I		I56,835	365,994
I892	I37,356	56,50I		I32,937	426,I87
I893	44,607	5I,54I		I09,8I3	39I,748
I894	85,809	60,907		I50,280	438,I86
I895	55,985	57,833		80,266	364,680
I896	36,546	54,3000		I46,40I	4I6,78I
I897	3I,364	54,847		I4I,83I	473,359
I898	I9,367	52,634		230,586	40I,794
I899	I8,280	50,552		2I9,4I5	4I4,363
I900	2I,364	52,58I	I08,023	I85,029	5I3,849
I90I	32,290	53,764	I08,932	I56,I94	4I4,583
I902	33,73I	53,5I0	I09,48I	I76,20I	482,573
I903	56,897	48,683	II4,I95	235,8I4	5I8,629
I904	57,69I	48,4I7	I20,633	2I2,6I7	423,327
I905	2,554	47,22I	8I,437	203,985	4I2,772
I906	8,040	52,993	86,26I	262,378	506,498
I907	I,706	55,229	84,56I	370,235	546,707
I908	2,99I	36,40I	8I,063	265,073	564,599
I909	4,68I	40,45I	70,335	322,238	533,626
I9I0	3,279	49,950	68,239	33I,570	445,564
I9II	3,72I	39,I7I	55,333	33I,65I	54I,044
I9I2	4,32I	49,085	55,II9	432,052	537,529
I9I3	I,534	6I,679	6I,5I8	536,430	576,950
I9I4-I9I8	No records available.				
I9I9		I3,770	I4,376	I60,663	38I,5I8
I920	2	I2,I0I	43,572	265,245	496,2I0
I92I		28,935	6,070	77,669	266,829
I922		I5,932	I,626	72,46I	58I,006
I923		I5,I33	476	I76,285	756,0I4
I924		20,560	376	233,383	690,078
I925		I4,966	683	55,533	629,560
I926		8,022	252	I4,424	47I,926
I927	960	55,278	649	20,470	646,090
I928	73	I3,456	453	I3,622	436,9I5
I929		I9,376	483	39,I63	448,985

Continued overleaf.

Table I9 continued.

Year	General (Tons)	Chalk & Gravel (Tons)	Iron Ore (Tons)	Timber (Loads)	Wood Pulp (Tons)	Scrap Iron & Steel (Tons)
I930	9,23I	432	I8,046	469,I27	5,860	
I93I	3,I38	525	8,5I6	324,826	8,450	
I932	2,6I9	764	234	336,963	9,3I4	
I933	2,330	I,422	4,9I4	324,940	I0,78I	
I934	6,27I	693	I3,765	440,064	I0,608	7,8I6
I935	5,2I5	389	II,38I	448,245	I2,509	28,477
I936	3,4I7					
I937	I,294	No records found.				
I938	7,424					
I939	4,480					
I940-I945	2nd. World War.		No records available.			
I946	I7,595	845	I2,6I4	234,259	9,9I9	25,760
I947	II,I75	772	No records found.			
I948	II,36I	250				
I949	I4,504		26,646	3I2,845	I0,454	38,005
I950	I3,638		59,I05	2I4,865	II,753	7I,I59
I95I	II,007		49,554	307,738	I4,405	I2,059
I952	I5,054		5I,240	408,88I	5,709	I3,248
I953	I4,I06		9I,769	282,587	I2,8I6	9I,769
I954	I3,345		I05,289	274,685	I6,500	25,664
I955	20,377		I09,634	296,575	I7,89I	I9,467

N.B. The Timber imports I953-55 are given in Tons.

Table 20. Detailed break-down of imports into the Hartlepools 1951-1955. (in Tons)

	1955	1954	1953	1952	1951
Coal and Coke	2,620	-	-	-	-
Pitwood	99,913	118,062	136,566	294,101	130,263
Mining Timber	5,181	8,709	13,460	20,049	18,767
Sawnwood	161,891	131,202	110,250	90,242	152,232
Sleepers	23,203	12,069	13,946		
Logs	2,898	3,298	6,685	1,251	6,476
Other wood goods	3,489	1,335	1,680	3,238	-
Iron and Steel	19,467	25,664	36,062	13,248	12,059
Iron Ore	109,634	105,289	91,769	51,240	49,554
Chrome Ore	3,150	-	-	-	-
Wood pulp	17,891	16,500	12,816	5,709	14,405
Fuel Oil	6,826	4,786	6,820	9,610	4,306
Fish	3,494	3,065	4,035	4,450	5,021
Sago Flour	5,747	-	-	-	-
Miscellaneous	1,160	5,494	5,251	1,199	1,680
Total:	466,564	435,483	439,340	494,337	394,763

Table 2I. Coals shipped at Seaham Harbour. (in Tons)
(Figures obtained from the Seaham Harbour Dock Co..)

I854	73I,957	I88I	5I0,995
I855	669,I53	I882	550,47I
I856	No record	I883	6I0,560
I857	766,600	I884	665,952
I858	7I8,279	I885	788,302
I859	668,955	I886	676,585
I860	663,283	I887	707,809
I86I	733,400	I888	585,280
I862	677,5I8	I889	544,935
I863	635,02I	I890	545,056
I864	634,224	I89I	537,898
I865	573,I24	I892	440,I0I
I866	582,624	I893	568,703
I867	554,320	I894	6I0,7I4
I868	55I,6I6	I895	528,202
I869	5I4,454	I896	500,0I3
I870	549,39I	I897	5I5,942
I87I	53I,23I	I898	No record.
I872	442,342	I899	450,000 approx.
I873	435,566	I900	5I0,000 approx.
I874	424,443	I90I	527,000 approx.
I875	423,282	I902	459,000 approx.
I876	509,648	I903	47I,000 approx.
I877	548,796	I904	488,800
I878	59I,7II	I905	645,900
I879	6I4,460	I906	I,466,538
I880	602,653	I907	I,583,630

Continued overleaf.

Table 2I continued.

I908	I,700,8I4	I934	2,044,836
I909	I,883,784	I935	2,094,252
I9I0	I,67I,344	I936	2,28I,897
I9II	I,932,973	I937	I,924,087
I9I2	I,84I,45I	I938	2,229,670
I9I3	2,059,449	I939	I,897,982
I9I4	I,902,337	I940	940,467
I9I5	I,584,266	I94I	I,0I4,936
I9I6	I,363,697	I942	I,256,496
I9I7	893,323	I943	I,30I,899
I9I8	477,389	I944	I,II2,789
I9I9	83I,262	I945	I,279,I34
I920	332,853	I946	I,450,420
I92I	700,307 ‡	I947	I,4I8,290
I922	I,743,254	I948	I,595,582
I923	I,74I,5I0	I949	I,758,572
I924	I,760,589	I950	I,756,54I
I925	I,594,986	I95I	I,998,849
I926	780,940 ‡	I952	I,944,940
I927	2,I35,598	I953	I,920,806
I928	2,II9,528	I954	I,952,997
I929	2,I09,I37	I955	I,845,942
I930	2,3I4,530	I956	I,879,790
I93I	2,080,867	I957	I,940,475
I932	I,785,285	I958	I,642,337
I933	I,824,207	I959	I,455,857

‡ Miners' Strike years.

APPENDIX B

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