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The history of John Bowes & Partners

up to 1914

C. E. Mountford, B. A.

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TABLE OF CONTENTS

		<u>Page</u>
Introduction		
Chapter 1	The early years : 1838 - 1845	1
Chapter 2	The years of rapid expansion : 1846 - 1855	40
Chapter 3	The years of consolidation : 1856 - 1865	95
Chapter 4	The years of slower expansion : 1866 - 1885	119
Chapter 5	The years of re-organisation : 1886 - 1914	164
Conclusion		
Appendix A	Coal output figures of John Bowes & Partners, 1871 - 1914	i
Appendix B	Comparison between the coal output figures of the Partners and other firms in the Durham coalfield with an annual output over 500,000 tons, 1871-1914.	xi
Appendix C	The coal output of John Bowes & Partners as a percentage of the total output of the Northumberland and Durham coalfield, 1871-1914	xxi
Appendix D	Average net selling price of all types of Durham coal, as given on the Accountants' Certificates of the Durham Coal Owners Association and the Durham Miners Association, compared with the coal output figures of John Bowes & Partners, 1871 - 1914.	xxiv
Appendix E	Coke output figures of John Bowes & Partners, 1872 - 1914.	xxviii
Appendix F	Comparison between the coke output figures of the Partners and other firms in the Durham coalfield with an annual output over 100,000 tons, 1872 - 1914.	xxxiv

	<u>Page</u>
Appendix G	
Men and boys employed in County Durham by John Bowes & Partners, 1884 - 1914	
(i) underground	xliv
(ii) at the surface of collieries, coke ovens, brickworks and railways	li
(iii) aggregate figures	lvii

Bibliography

INTRODUCTION.

INTRODUCTION.

The North-Eastern coal-field was for many hundreds of years the major coal-producing area of Britain. Compared with other parts of the country where coal was worked, it had three great advantages - that the coal outcropped and was thus easily won, that the rivers in the valleys where the outcrops were mostly to be found were navigable, and that the coal could easily be transported to London, by far Britain's largest market. In the days when the only means of moving large quantities of goods was by water, especially by sea, the coal-owners of Northumberland and Durham established a dominance of the British coal industry which was never surpassed and only slowly eroded by other areas.

Although archaeological evidence has shown that the Romans used coal in County Durham (though only on a very small scale), and although there are a few references to the use of coal in the Boldon Book of 1086, the coal outcrops would not seem to have been worked to any great extent until the thirteenth century, when the monasteries, especially the Priory of Tynemouth, developed a considerable trade. During this period and for many years afterwards coal was obtained by the "bell-pit" method - shallow pits in the ground excavated in the shape of a bell and anything up to thirty feet deep. When the excavation had attained such a size that the sides threatened to collapse it was abandoned and a new one begun. Most of the bell pits were situated in the Tyne valley,

where much of the evidence has been destroyed by later development, though recent aerial photography has provided conclusive evidence of bell pit workings on the Town Moor at Newcastle.

The demand for coal in the Tyne and Wear valleys was very much geared to the requirements of the London market. As these increased the coal-owners were compelled to seek coal further inland, and eventually to sink shafts to obtain it. These deeper workings created new problems, not the least of which was drainage. It would seem that the industry reached a critical state by the early 1700's, and was only saved from disaster by the invention of Newcomen's pumping engine. The installation of the first of these in the North-East cannot be dated with certainty, but it seems likely to have been in 1715 at Tanfield Lea. This provides a striking example of the extent to which the industry had spread from the rivers by that time, as this village lies about eight miles south-west of Gateshead. Other Newcomen engines were built in the North, and these enabled large areas which had previously been considered unworkable to be brought into production.

One problem which the coal-owners of the eighteenth century had to face was that of transport. There was little point in sinking a pit eight miles from the Tyne if there were great difficulties in transporting its coal to the river. Here the geography of County Durham proved an advantage. The highest area of the county lies in the west, and the land slopes towards both the sea

in the east and the Tyne valley in the north. This meant that to reach the river loads of coal would travel downhill, and so horse and cart could be employed. The cart was allowed to travel by gravity where possible, and the horse was used to haul it back from the river to the pit. From this it was a short step to the construction of wooden waggonways, the first of which was the famous Tanfield waggonway, built in 1727 from the Tanfield area to the Tyne. Thus waggonways, with iron rails after 1770, were well established in Durham long before Brindley designed and built the Duke of Bridgewater's Canal in 1769. Indeed, the development of canals scarcely affected the North-East. The severe grades of West Durham would have demanded long flights of locks, causing delays; while a comparison of the cost of building a canal and a waggonway could have left the coal-owners with only one choice. By 1800 the transport pattern of Durham was firmly established; a considerable net-work of waggonways brought coal down to be trans-shipped at "staithes" on the river banks, where small sailing ships, known as "keels", holding about 21 tons, took the coal downstream to the colliers moored at Newcastle or Sunderland.

Most of the coal-owners possessed only one pit, very often leased from the Church; but in 1726 a group of the most powerful coal-owners in North-East England formed themselves into what became known as "The Grand Alliance". In view of its importance, both in relation to the industry in general and the early history of John Bowes & Partners, this deserves more detailed study. The

agreement was signed on 27th June 1726 between Sidney Wortley, Edward Wortley and Thomas Ord (all of Newcastle) for the first part, Sir Henry Liddell and George Liddell (of Ravensworth, near Gateshead) for the second part, George Bowes (of Gibside, near Gateshead) for the third part and William Cotesworth (of Newcastle) for the fourth part. The agreement was dated to run for 99 years from 11th November 1726, but by this date William Cotesworth had died, so his share was divided among the others.

It has been thought in the past that the agreement arose out of difficulties in obtaining wayleaves (1) for waggonways to the Tyne (2), but this would seem unlikely. A more authoritative view was put forward by Sweezy in 1938:

".....The intent (of the agreement) is clear. The various signatory parties were joining hands to prevent the opening of new collieries by buying up lands, royalties and wayleaves. Any coal property which they could not directly get hold of they proposed to block off from an outlet to the river." (3)

Even more important, Sweezy quotes evidence to show that the "Allies" from the first probably intended to regulate both prices

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- (1) If he wished to build a waggonway, a coal owner came to an agreement with the owner of the land over which it was to pass under which the former rented the land and also agreed to a charge on the amount of coal or other goods which passed over the land in question. This was known as a "wayleave" agreement.
 - (2) cf. LEE, C.E. "The World's Oldest Railway." Newcomen Society Transactions, XXV (1946).
 - (3) SWEEZY, P.M. Monopoly and Competition in the English Coal Trade. Harvard: Harvard University Press, 1938, p.24.

and output. All of the important sea-sale collieries, whether owned by one of the "Grand Allies" or not, were allocated an output quota, and such was the "Allies" dominance of the industry that the owners of other collieries were compelled to agree or face ruthless undercutting of prices, which was employed at least once with complete success (1). There is no evidence to show whether the "Allies" were able to continue this regulation after the 1730's, but it was the fore-runner of the famous agreement known as "The Limitation of the Vend", signed in 1771, which continued with a few interruptions until 1845. The aim of the Limitation was quite simply to fix a price which would enable North Eastern coal to be carried to London and sold at a price just under that for which coal from other areas could be obtained there, keeping that price as high as possible. This control of the price of coal depended on the adherence to the agreement by all the major coal-owners, the acceptance of the output quota allocated to them by the Committee under which the agreement was administered (strict output control being an essential concomitant of price control) and also the complete control of the London market. This last seemed assured for many years, and in the short periods after 1771 when free and open competition was practised the prices fell to such a low level that the owners were convinced that the "Limitation" should be maintained. Throughout this period the

(1) SWEEZY, op.cit. pp. 25 - 29.

"Grand Allies" and their descendants maintained their overwhelming superiority in the industry, dominating to such a degree that has perhaps never been known since.

It has been estimated that in 1800 the coal output of the United Kingdom was 11,000,000 tons (1), and easily the largest share of this was held by the Northumberland & Durham coal-field. The vast majority of this output was sold for domestic purposes (2). The largest industrial consumer was the iron industry, which took between 10 and 15 per cent; small quantities would be taken by such people as brick-makers, brewers, distillers, copper, tin and lead smelters and (in the North East) the salt industry; only 2 per cent was sent abroad (3).

By 1816 output is estimated to have risen to 15,900,000 tons, and it was at this point that the industry once again faced a crisis. Collieries which had proved economic to work during the Napoleonic War faced closure through a fall in prices, and coupled to this was a sharp increase in transport costs due to the high price of horse fodder. This led to a closer look at Trevithick's

(1) DEANE, P. & COLE, W.A. British Economic Growth, 1688-1959. Cambridge: Cambridge University Press, 1962, p.215.

(2) It should be remembered that much of the coal raised in the North-East then would not now be considered household coal; a large proportion of it would have been first-class coking coal.

(3) DEANE & COLE, op.cit., p.218.

steam locomotive, hitherto regarded as a toy, and there followed the experiments of men like William Hedley, William Chapman and above all George Stephenson, all of them financed by powerful coal-owners, Stephenson at Killingworth Colliery by none other than the "Grand Allies". Stephenson's success led directly to the decision to use locomotives on the Stockton & Darlington Railway, and so the beginning of the Railway Age.

The development of railways was of paramount importance to the coal industry. The spread of the railway network opened up a vast potential market for coal. Hitherto land communications between North-East England and the rest of the country had been poor. As we have seen, the Canal Age had had no effect in the North-East; the coal-owners concentrated more on the extension of waggonways, and such refinements as the self-acting (gravity-worked) incline and the incline worked by a stationary engine had been developed. But these did not take the coal outside the county; for this the owners were compelled to rely on sea-going colliers - a trade which could suffer badly from adverse weather conditions. Despite being the home of railways, the North-East was not linked to London until 1844, and even then the railway did not have the capacity to carry the potentially large volume of traffic; in 1845 T.J. Taylor, a prominent figure in the coal trade, estimated that only 8,377 tons of coal were taken to London by rail, much less than might

have been expected (1). Nevertheless, the potential was there; all that was needed was an increase in carrying capacity.

Secondly, the railways created a considerable demand for fuel for locomotives. At first this was coal; but almost immediately difficulties began to arise. Perhaps the most important of these was that Parliament began to take a serious view of the amount of smoke and cinders emitted from the Stockton & Darlington engines, to the terror of cattle and people living near the line. Thus when the Liverpool & Manchester Railway Bill came before Parliament a clause was inserted requiring the locomotives to consume their own smoke, and later Acts were specific - coke had to be used. Furthermore, it was soon discovered that the use of coke resulted in greater fuel economy. One of the great problems of early locomotives was a deficiency in steam raising power, and one of the attempts to remedy this was to increase the intensity of heat in the fire. In the third edition of his "Treatise on Railroads" Nicholas Wood claimed that only 11.7 lbs of coke were needed to convert one cubic foot of water into steam, compared with 18.34 lbs of coal, not only producing a hotter fire, but also a saving in fuel (2).

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- (1) TAYLOR, T.J. Observations addressed to the Coal Owners of North-
umberland and Durham on the Coal Trade of Those Counties : More
Especially with Regard to the Cause of, and Remedy for, Its Present
Depressed Condition. Newcastle: Taylor, 1846.
- (2) WOOD, N. Treatise on Railroads (3rd ed.) London: Longman, Orme,
Brown Green & Longmans, 1838.

All this provided a great stimulus to the North-East coal-field. Little was known then of coal technology, but it had long been known that the Durham coal seams produced an excellent bituminous coal which made an equally first-class coke. Moreover, attempts made on other coal-fields to manufacture coke in beehive ovens similar to those used in Northumberland & Durham were not very successful for reasons that were not then appreciated. Thus the North-East owners found themselves virtually unchallenged in a rapidly expanding market for coke and coking coal, and they were not slow to take advantage.

But the greatest of all the effects of the growth of railways was the tremendous stimulus given to the iron industry. For many years iron had been manufactured in the Tyne valley from local supplies of iron ore and latterly locally-manufactured coke. But now there came a great demand for iron to build locomotives, bridges, rails and many other things, and the Durham iron industry began to expand rapidly. Supplies of iron ore were sought further inland; the famous works at Consett were established in 1840, followed by the erection of blast furnaces at Stanhope in 1845 and Tow Law in 1846, by which time production had also begun at the mouth of the River Tees.

Here again the effect of this expansion on the coal industry was soon evident. We have already seen that Durham produced excellent bituminous coal, and attempts to make even a fair quality coke, to say nothing of a good metallurgical coke, had met with

failure elsewhere. Other things too were in the North-East coal owners' favour. The best coking coal was found in West Durham, and here the seams were thickest and nearest to the surface. Coal, therefore, was cheap; as late as 1860 the Consett Iron Works was obtaining local coal for between 2/- and 2/6d per ton (1). Moreover, the success of the Stockton & Darlington Railway encouraged other railway promoters, while the larger coal owners built their own private railways to convey the coal to the rivers for shipment, though the full development of the railway system in both sectors was not achieved until after the middle of the century.

Thus the development of railways in Britain created great opportunities for North-East coal owners; but before considering the impact of the growth of railways, a closer look must be taken at the structure and distribution of the industry. Perhaps because its beginnings lay so far back in the past compared with other coal-fields, its structure differs considerably from other coal-fields. In South Wales, for example, the entrepreneurs were usually local businessmen in other trades who, wishing to enter the coal trade, leased land from a local land-owner. In Durham, on the other hand, it was much more common for the land-owner to work the coal under his land himself, usually supervising operations through an agent.

(1) FORDYCE, W. History of Coal & Iron. London: Sampson Low, Son & Co. 1860, p.149.

This was notably so in the traditional areas of mining. In the Tyne valley the "Grand Allies" still reigned supreme, while the Wear valley was dominated by the Lambton family and the Marquis of Londonderry, though the latter had become so dissatisfied with the chronic shipping congestion at Sunderland that in 1828 he had begun to construct a new port for his coal at Seaham. In West and South-West Durham the pattern was slightly different in that the initiative usually came from the smaller land-owners; businessmen like the Pease family of Darlington were the exception to the rule.

The sales structure was also different in Durham from elsewhere. In other places the coal owner would more often than not sell his coal direct to a customer. The position in the North-East was well explained by Lord Bute, who owned collieries in both Durham and South Wales:

".....(In Durham) there is one ingredient..... that I look upon as a sine qua non - that is, that we carry on business through a Fitter, that is to say, a Shipping Merchant upon a del credere commission - which is, the Owners pay a higher rate of Commission and have no risk of bad debts." (1)

These fitters often had other interests besides selling coal, and many of them did not deal exclusively with only one firm; on the other hand, an individual firm usually dealt with only one fitter.

At this period, however, the fitters seem to have handled only

(1) National Library of Wales, Bute MSS, Box 70, Letter Book Vol. VII; letter from Lord Bute to Capt. Steel, 9th January 1841.

local business; in participating in the large London household market the owners dealt with "coal factors". There were normally London men, dealing with coal on the London Coal Exchange. Levy (1) claimed that they were independant buyers of coal, that they were closely organised in such a way as to exert an important influence on the market price and that they had the largest share of the middlemen's profits. Sweezy dismisses this view as unsupported by evidence, and believed that they were agents working on commission for the northern owners and the ship owners, handling incoming cargoes to London and arranging sales to the first buyers (2). The evidence in favour of this is more convincing. Certainly the coal owners regarded the factors as their servants, not their masters. Here too the owner would deal with only one factor, though a factor would probably have dealings with a number of firms. Finally, it will be remembered that the "Limitation of the Vend", with its control of price and output, had been revived in 1771, and it was maintained, with only a few lapses, for more than seventy years.

The distribution of the coal industry in County Durham in the 1830's was by no means uniform. Coal was being mined in three main areas, all offering easy means of transport. The first of these

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- (1) LEVY, H. Monopoly and Competition : A Study in English Industrial Organisation. London: Macmillan, 1911.
- (2) SWEEZY, op.cit. p.69.

was along the Tyne valley, beginning at Jarrow and continuing upstream as far as Wylam. While there were collieries on the river bank, a considerable quantity of the coal was mined much further inland (e.g. the Pontop and Tanfield areas) and being brought to the Tyne by waggonways. Similar developments had taken place on the Northumberland side of the river. Along the Wear valley the situation was similar, and coal was being mined upstream as far as Chester-le-Street to be shipped at Sunderland. The third area was to be found near Bishop Auckland, coal from here being shipped from the Tees via the Stockton & Darlington Railway. This was the newest area of development, greatly stimulated by the construction of the Railway; shipments from the Tees had risen dramatically from only 19,000 tons in 1828 to 222,000 tons in 1834 (1), in which year the river was added to the "Limitation". Thus there were large areas of unexploited coal in West Durham, while most of Central and South Durham had not been touched; indeed, the extent of the coal-field in the south had not yet been determined. In addition, it had been believed for many years that no coal lay under the magnesium limestone cover of East Durham, but the perseverance of the Hetton Coal Company finally destroyed this misconception by sinking an extremely valuable colliery through the limestone at Hetton in 1822. Furthermore,

(1) Report of the Select Committee on the State of the Coal Trade, together with the minutes of Evidence and Appendix, 1836, p.137.

the winning of Monkwearmouth Colliery on the north bank of the Wear at Sunderland in 1834, after eight years work and the expenditure of a huge sum of money, also showed that there was coal on the east coast, but due to the fact that the outlay and working costs in the west were so much lower, it was unlikely to be worked extensively for many years.

By 1825, the year of the opening of the Stockton & Darlington Railway, it is estimated that the total coal output of the United Kingdom had risen to 21,900,000 tons (1). With the future of the locomotive very much in the balance at this stage, it is perhaps not surprising that this figure had only risen to 22,400,000 tons by 1830. But after this date the spread of railways, with its effect on the iron industry, soon began to make its mark. In the iron industry "rapid growth - involving at least a trebling of output every two decades - was maintained from the early 1820's until the early 1860's" (2), and this, coupled with the demand for coke from the railways, led many to believe that investment in the Great Northern Coal-field would bring large profits.

The first, and slower, phase of the boom may be said to have occurred between 1825 and 1836. No figures are available for 1825, but the position had probably not greatly changed by 1829, when more precise figures are available. When these are compared

(1) DEANE & COLE, op.cit. p.215.

(2) *ibid.*, p.224.

with those for 1836, it will be seen that there was only a slight increase in the number of collieries shipping coal on the Tyne, though the river maintained its lead over all the other areas put together. As one would have been led to expect from the export figures quoted earlier, the big increase during this period was among the collieries shipping on the Tees, a striking example of the economic effect of the Stockton & Darlington Railway on the area which it served. By contrast, there was no increase in the number of collieries shipping on the Wear or on the mid-Northumberland rivers of Hartley and Blyth:

Fig. 1 - Expansion of North-East coal-field, 1829-1836

Estimated number of collieries	<u>1829</u>	<u>1836</u>
Tyne	41 (1)	45 (2)
Wear	18 (1)	18 (3)
Tees	6 (4)	20 (5)
Hartley and Blyth	4 (6)	4 (6)
	—	—
TOTALS	69	87

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- (1) Testimony of J. Buddle, "Report from the Select Committee of the House of Lords appointed to take into consideration the State of the Coal Trade in the United Kingdom; with the Minutes of Evidence taken before the Committee and an Appendix and Index, 1829", p.28.
 - (2) Testimony of J. Buddle, "Report of the Coal Trade, 1836", p.118.
 - (3) Testimony of H. Morton, "Report of the Coal Trade, 1836", p.77 - 78.
 - (4) Estimate based on the quantity shipped by the Stockton & Darlington Railway in 1829; quoted in SWEEZY, op.cit., p.110.
 - (5) Testimony of T. Storey, "Report of the Coal Trade, 1836", p.104.
 - (6) SWEEZY, op.cit., p.110.

The estimates of productive capacity made at the time show considerable disagreement. Taylor estimated that the figure for the whole of Northumberland and Durham in 1835 was 5,444,000 tons (1), but Buddle in the following year claimed that the total for the Tyne and Wear alone was 8,100,000 tons (2). Even taking into consideration the fact that the collieries were not working to full capacity because of the "Limitation", if one accepts Deane and Cole's estimate of 27,700,000 tons for the whole of the United Kingdom in 1835 (3), Taylor's estimate would seem impossibly low.

In 1834 began the period of the first railway boom, when many of the great main-line railways were authorised. This had an immediate effect on the iron industry and thus also on the coal industry, as is at once evident if the comparison above is continued only as far as 1843:

Fig. 2 - Expansion of North-East coal-field, 1836-1843

Estimated number of collieries	<u>1836</u>	<u>1843</u>
Tyne	45	70 (4)
Wear	18	28 (4)
Tees	20	22 (4)
Hartley and Blyth	4	6 (5)
	—	—
TOTALS	87	126

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- (1) TAYLOR, T.J., op.cit., p.21.
 - (2) Testimony of J. Buddle, "Report of the Coal Trade, 1836", p.118.
 - (3) DEANE & COLE, op.cit., p.215.
 - (4) List in Coal Trade Minute Book dated 13th April 1843; quoted by SWEEZY, op.cit., p.110.
 - (5) As quoted by SWEEZY, op.cit., p.110.

Here the pattern has changed, with by far the greatest increase occurring in the area served by the Tyne, and this can be reasonably attributed to opening of the Newcastle & Carlisle, Brandling Junction and Stanhope & Tyne Railways during this period. All of these gave access to the Tyne from West Durham, notably the Tanfield and Consett areas, and made possible the sinking of new collieries by affording them an outlet to the rivers.

But the cold figures tell only half of the story. From about 1835 onwards there were unparalleled scenes of frenzied activity, especially in West Durham:

".....In the great northern coal-field the local records teem with notices of existing collieries being extended, new pits being sunk and old ones re-opened, not only, as in former times, for household coal chiefly, but for coking, gas making, manufacturing and steam purposes." (1)

From all over the area people rushed to invest money in old and new collieries. Owners already established extended their workings: land-owners began to investigate hitherto ignored land: private companies were formed to lease land from owners who did not wish to join the rush themselves, and for those who were neither land-owners nor had access to one of the private companies, the opportunity was given, apparently for the first time in the North-East coal industry, of investing their money in speculative joint-stock companies, always ready to flourish in boom conditions. Two

(1) GALLOWAY, R.L. Annals of Coal Mining & the Coal Trade (Vol.II). London: Colliery Guardian Co., 1904, p.6.

such companies made their appearance during this period - the Durham County Coal Company, launched in 1836 with a capital of £500,000 in £50 shares, and in the following year the Northern Coal Mining Company also with a capital of £500,000; and it is in connection with the Durham County Coal Company that we find the first reference as a coal speculator to John Bowes.

As has been noted above, one of the original signatories to the "Grand Alliance" in 1726 was George Bowes (b.1701), a member of an old County Durham family, whose country seat was Gibside, about five miles south-west of Gateshead, though the family also owned Streatlam Castle, near Barnard Castle. He died in 1760, and his great wealth passed to his only child, Mary Eleanor Bowes. In 1767 she married John, 9th Earl of Strathmore, who was obliged by the terms of George Bowes' will to change his name to Bowes. The Earl died in 1776, and the title passed to his eldest son John, born in April 1769, who in July 1815 was also created Baron Bowes of Streatlam Castle. On 2nd July 1820 he married Mary Milner, of Stainton, near Barnard Castle, but on the following day he died. Thereupon, as "Burke's Peerage" puts it, "the Barony of Bowes in the United Kingdom became extinct and the Scottish peerage devolved upon his brother."

But this tells only part of the story. For Mary Milner, who was the daughter of a gardener and eighteen years younger than her husband, had been the Earl's mistress since 1809; and on 19th June

1811 a son was born to them. At first the boy was called John Milner, but before long this was changed to John Bowes. The Earl and Mary were devoted to each other, but not until he fell seriously ill did he make any move towards marriage.

The Earl's death began a protracted and involved legal struggle. As John Bowes, then nine years old, was the only - and now legitimate - son of the Earl, he was acclaimed by his supporters as 11th Earl of Strathmore - a claim strongly opposed by the late Earl's younger brother. For John Bowes to succeed in his claim it had to be proved that he was the son of the 10th Earl and Mary Milner, that their marriage of 2nd July 1820 was valid and, since it was a Scottish title, that the Earl and his wife had had a Scottish domicile. The case went to the House of Lords, who in 1821 decided that although the first two points were proven in the boy's favour the late Earl's domicile had been in England, and so John Bowes' claim was dismissed.

Thus the peerage and the Scottish lands were lost; but the late Earl's extensive estates in Durham and Yorkshire were able to pass to his son as the Earl's will had directed, and these were bringing in at that time an estimated income of £20,000 per year. Until the boy should attain his majority the estates were placed in the hands of Trustees, but they soon passed into Chancery, where they were to remain for over twenty years, so that, although Bowes received the income, his control over them was limited by the pleasure of the Master of Chancery.

After attending a private school Bowes went to Eton and from

there to Trinity College, Cambridge. It was probably here that he first met William Hutt, who arrived at Trinity College in 1827. Hutt, born on 6th October 1801, and so nearly ten years older than Bowes, was a native of the Isle of Wight. He is said to have been Bowes' tutor, and it may well have been through this connection that he met the Dowager Countess of Strathmore, whom he married on 16th March 1831, thus becoming both Bowes' step-father and his tenant at Gibside.

The two men were to be close friends for over fifty years, yet in some ways they were opposites. Bowes was an intelligent and able man, shrewd, hard-headed and efficient, with a capacity for hard work and attention to detail. Generous and kindly, he had a dry (and in his early years occasionally free) sense of humour; he was to be a famous race-horse owner and art collector, as well as the proprietor and producer of the famous Theatre des Varietes in Paris, where he was to spend a good deal of his life and marry in turn two foreign countesses. Hutt too was an able and cultured man, possessed of a rather academic sense of humour, cautious and destined to be a successful politician. But Bowes, who was only 5 ft. 1 in. tall, was a rather shy and lonely man, especially after the death of his first wife, whom he loved dearly, and Hutt too seems to have had few close friends.

Although Bowes had inherited his father's share in the "Grand Allies" partnership, he seems to have had little interest at this stage in anything except its financial side. The original partnership

agreement had lapsed in November 1825, but was continued by a verbal arrangement under the style of "Lord Ravensworth & Partners". The agreement was finally renewed by an indenture dated 3rd May 1834 but was back-dated to 25th November 1825 for a term of thirty years from that date. By this time Thomas Liddell (b.1775), created Baron Ravensworth in 1821, held one third, James Wortley (b.1776), created Baron Wharnccliffe in 1826, held one third and the Trustees of the late Earl of Strathmore (in practice John Bowes, and thus easily the youngest partner) the remaining third. The measure of Bowes' interest is shown by the fact that rather than renew the agreement the partners had attempted to sell the collieries, then valued at £114,628..14..2d., as "no persons in the partnership were interested in the winning and vending of coals" (1), but no purchaser could be found, and so the partnership was compelled to continue.

Meanwhile Bowes' career had taken a parliamentary turn, for in December 1832, although only 21, he was elected as one of the Members of Parliament for South Durham, gaining only 55 fewer votes than Joseph Pease, one of the famous Quaker family of Darlington. He stood as a Liberal, an unusual choice for a prominent land-owner at this period, most of whom were Whigs in the north, such as Earl Grey. In the same election Hutt became the Liberal Member for Hull, and it

(1) Bowes Estate Act, 1850; copy in Strathmore MSS, Box 1, Durham County Record Office.

might have seemed that both men were set fair for a long and probably distinguished parliamentary career. But Bowes never spoke in the House and became progressively more irritated with the claims, especially financial, which his position imposed.

But the great boom which got under way in 1835 cannot have failed to escape Bowes' notice, for several approaches were made to him during this period for leases to work coal on his land. His first actual investment in the coal trade would seem to date from the late spring of 1836, when both he and Hutt were induced to become Honorary Directors of the Durham County Coal Company, whose prospectus bore the date 23rd May 1836 (1). It was an unwieldy concern from the start, and when it was finally wound up in 1852 most of the £500,000 with which it began had been lost. It seems likely that the appearance of Bowes and Hutt on the list of Honorary Directors was due more to a desire on the part of the Coal Company to have men of substance associated with it than a desire on their part to enter the coal trade. Bowes certainly took no part in the company's affairs; indeed, as early as July 1836 he was writing to Thomas Wheldon, his solicitor in Barnard Castle, for information about the company because "a man has asked my advice and I hardly know how to advise him" (2). The company

(1) FORDYCE, op.cit., p.105.

(2) Bowes MSS, Box 2, Bowes Museum, Barnard Castle: letter from Bowes to Wheldon, 25th July 1836.

leased some of Bowes' land, but their methods of business soon revealed themselves, for in May 1837 Bowes wrote to Wheldon:

".....Our friends of the Coal Co. are both knaves and fools. I will not stand any more nonsense on the part of these fellows." (1)

while later in the same month he had become very suspicious of the men at the helm, for in referring to the company's Agent he wrote:

".....Botcherly, having put a good sum of money in his pocket, may butt off to America and leave us all to fish." (2)

The Durham County Coal Company was already showing its true colours; yet as the demand for coal and coke not only showed no sign of declining but was increasing steadily as more railway construction was begun, it was obvious that, given good management, a man willing to invest capital in the industry could look forward to a good return; and a man under whose land coking coal might be found was in a very happy position. Just such a person was John Bowes - and so it came about that he began to look more closely at the family estates.

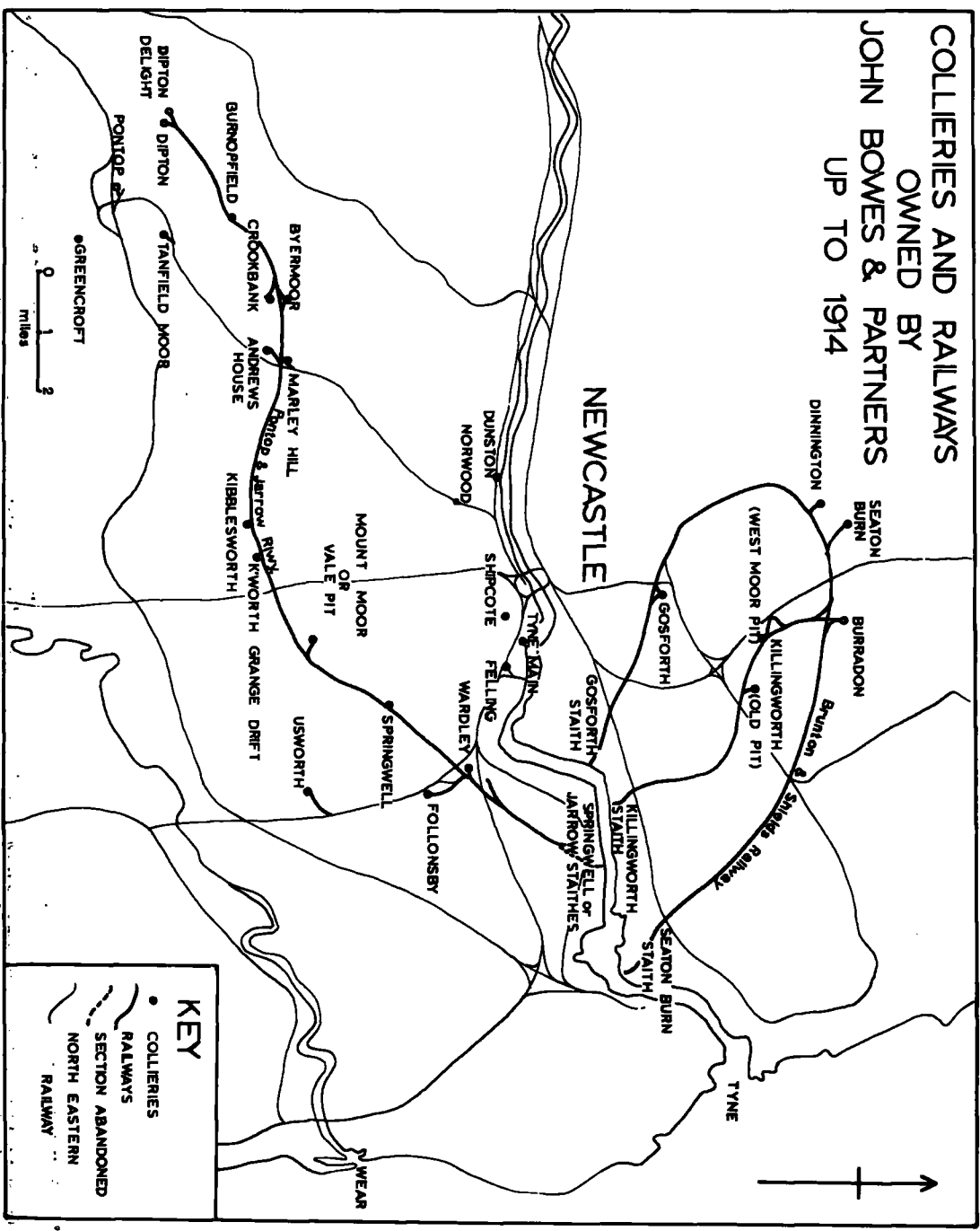
His initiative was the first move in the creation of what was to become one of the great firms in the British coal industry. The coal under Bowes' Gibside estate was found to produce coke which was second to none, and in Charles Mark Palmer Bowes found a Managing

(1) Bowes MSS, Box 2, Bowes Museum, Barnard Castle: letter from Bowes to Wheldon, 8th May 1837.

(2) *ibid.*, letter from Bowes to Wheldon, 17th May 1837.

Partner with rare energy and ability. As the demand for coke gradually fell the firm which bore Bowes' name increased its investment in the gas coal trade. The great achievement of John Bowes and his Partners is shown in their production statistics, for in the years before Bowes' death in 1885 the firm was raising about 2,000,000 tons of coal annually in addition to producing about 250,000 tons of coke. It formed an integral yet fully independant member of the huge industrial empire created by Palmer. Its great days were past by 1914, but it continued to occupy a prominent position in the coal trade.

COLLIERIES AND RAILWAYS
 OWNED BY
 JOHN BOWES & PARTNERS
 UP TO 1914



KEY

- COLLIERIES
- RAILWAYS
- - - SECTION ABANDONED
- ... NORTH EASTERN RAILWAY

CHAPTER 1.

THE EARLY YEARS : 1838 - 1845

Chapter 1.

The Early Years : 1838 - 1845

Among the extensive estates which John Bowes owned was Gibside, in north-west Durham. Coal was being mined here at Marley Hill as early as 1665, but the colliery was abandoned by the Earl of Strathmore in 1815 as unprofitable, almost certainly because of excessive water in the workings. Bowes determined to see whether a profitable colliery might not be sunk on the estate, and to do this he engaged Nicholas Wood, undoubtedly the most famous man in the Northumberland and Durham coal industry at that time (1).

Wood was born in April 1795, making him sixteen years older than Bowes. His father was a friend of Sir Thomas Liddell (later Lord Ravensworth), one of the "Grand Allies", who thought so highly of the boy that he sent him when only sixteen to be Under Viewer at Killingworth Colliery, about four miles north-east of Newcastle. So rapid was his progress here that in 1815, when only twenty, he became Head Viewer (2). By this time he was a close friend of

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- (1) The Memorandum of 1885 (Strathmore MSS. Box 8, Durham County Record Office), dealt with in Chapter 4, states that Wood took the initiative in proposing a new winning on the Gibside estate, but there is no mention of this in Bowes' correspondence of 1838 - 1843.
 - (2) A post combining the duties of the present-day colliery manager and colliery engineer.

George Stephenson, and took part in Stephenson's experiments at Killingworth to develop a safety lamp for miners. Later he was involved in Stephenson's work there on the steam locomotive. Throughout the period 1815-1830 he was a staunch supporter of the new means of traction, giving practical help as well as advocating it through books such as "Treatise on Railroads" (which ran to three editions) and defending it against such critics as Benjamin Thompson, a strong advocate of rope haulage on railways. Indeed, such was Wood's fame in the railway field that, when in 1829 the Rainhill Trials were held to decide the method of haulage on the Liverpool and Manchester Railway, Wood was appointed to be one of the judges.

By this time he was equally famous in the coal trade, not only as a prominent member of the Coal Trade Committee, but also as Managing Partner of the great Hetton Coal Company, and an authority on mining engineering. He seems to have been an autocratic, rather strait-laced man, accustomed to the exercise of executive power. He was also Checkviewer (1) to Lord Ravensworth & Partners, through whom he was thus personally known to John Bowes. He was therefore the natural man for Bowes to consult over the possibility of sinking a colliery on the Gibside estate.

(1) Normally the equivalent of a consulting engineer, but Wood also seems to have handled the administrative, secretarial, financial and sales side of the firm.

Bowes seems to have taken the decision to proceed with exploration about the middle of 1838. Unfortunately, in July 1838 Wood accepted an invitation from the Directors of the Great Western Railway to "inspect and report to them on the (Railway's) permanent way, the gauge, and generally on the novel system which has been adopted, including the construction and efficiency of the engines" (1), and this took him away from Durham at the time when Bowes wanted him. So in his absence two men named Fenwick and Gray (2) were engaged to review the area and produce reports respecting the depth and quality of the coal and cost of winning and working it.

The resultant activity soon attracted the attention of Joseph Pease, who was also an important colliery owner. In October 1838 he wrote to Wood offering to pay half the cost of making a boring, with the further offer that "if he takes the coal he will pay the whole, as the Boring will be useful to him as regards the coal under lease to him" (3). Whether this offer was accepted is not known.

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- (1) MACDERMOT, E. "History of the Great Western Railway". Vol.I. Part I. London: Great Western Railway Company, 1927, p.64.
 - (2) The identity of these men is uncertain. Bowes' Agent at Gibside was named Fenwick, and the two men may be the same; Gray was probably James Gray, who became the first Viewer at the new colliery.
 - (3) Strathmore MSS, Box 1, Durham County Record Office: letter from Wood to Bowes, 18th October 1838.

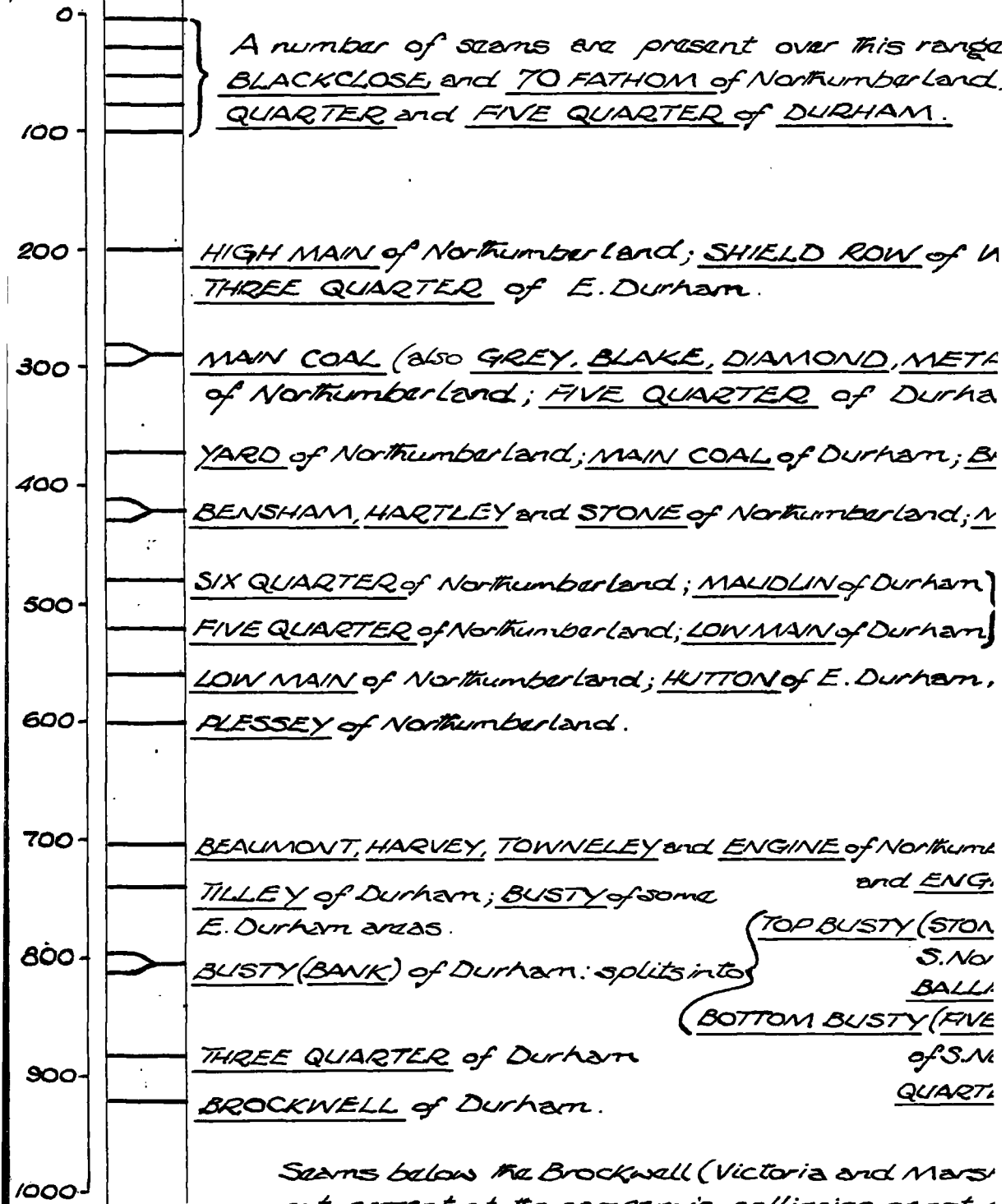
A number of borings were made on the estate, and many of them struck sand, which was likely to cause trouble if a shaft were sunk. But Bowes received no reports; Wood was too busy working on his overdue report on the Great Western Railway, and the reports of Messrs. Fenwick and Gray were also delayed; Gray did not submit his report until November, while Wood was still waiting for Fenwick's report on 20th December (1). It seems that these reports proved inconclusive, for during the first half of 1839 Wood himself drew up a report. Nothing is known of its content, though it seems Wood reported favourably on the quality of the coal, and quoted a figure of £6,000 as the cost of winning a colliery at Marley Hill, for this sum was mentioned by Bowes in a letter to Wheldon in July 1839 (2). From this letter it would seem that by this time Bowes had definitely decided that a colliery at Marley Hill would be a profitable investment; but whether because he feared a General Election was imminent, with its likelihood of heavy expense, or from some other reason, he decided against raising all the necessary money himself. Instead, some time during the summer of 1839 he came to a verbal agreement with Wood, Hutt and Lady Strathmore to form a partnership to sink and work the colliery, the

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- (1) Strathmore MSS, Box 1, Durham County Record Office: letter from Wood to Bowes, 20th December 1838.
 - (2) Bowes MSS, Box 2, Bowes Museum, Barnard Castle: letter from Bowes to Wheldon, 29th July 1839.

COAL SEAMS OF NORTHUMBERLAND

taken from: Northern Industrial Group "Northern survey of industrial facilities." New

Average depth
(in feet)
at which
found



Seams below the Brockwell (Victoria and Mars) not present at the company's collieries or not p

"The naming of the seams and their correlation, area is in a state of great confusion, the same bearing different names in different places, or in different seams bearing the same name over in the s

partnership leasing the Royalty from him. Lady Strathmore was included because of the financial contribution she agreed to make, but she never at any time took any part in the Partnership's activities or decisions.

The exact boundaries of the land under lease were finally agreed in November 1839, and arrangements were made to begin the sinking of the shaft, Wood of course being in control, supervising the work and negotiating with prospective customers for the sale of the coal.

Wood made good progress in beginning operations. The sinking of the shaft, known as the Lodge Pit, began on 9th January 1840, and by the end of the month the sinkers were ten fathoms down. On 12th March came the first success, when at 25 fathoms the Hutton seam was proved and found to be nine feet thick, though including twelve inches of "band" (1). The sinking continued a little further, but then had to be stopped as the amount of water became too great for the horse gin which was pumping it, and a new steam pumping engine was ordered.

Meanwhile Wood made preparations to work and sell the coal from the Hutton seam. The new pit lay quite near the Brandling Junction Railway's Tanfield branch, the famous waggonway of 1727, which the railway company had re-laid as a railway and re-opened in

(1) The local term for a thin seam of stone in a coal seam.

November 1839. It consisted almost entirely of rope-worked inclines, and Wood was the railway's Engineer. With this line so near the Partners proposed to lay a short branch from the new colliery to Bowes Bridge, which was an inter-change point between two of the inclines, a distance of just over 800 yards. A curious point arose at this stage, for although the land on which the colliery branch was to be built was owned by Bowes, Lord Ravensworth claimed a right of way-leave under the Blackburn Fell Enclosure Act of 1801. Discussion on this was postponed for a while, and work on the line began in April 1840, to be finished about the end of May. When this was done and men had been engaged, production of coal from the Hutton seam began. Wood had agreed with Isaac Cookson & Company, a large glass manufacturer in South Shields, for the sale of a considerable proportion of the coal from the new pit, and this firm were so satisfied that Marley Hill coal was suitable for the production of glass that in the following month they promised to take 24 chaldrons (1) per day from the beginning of July, though in the event the pit was unable to meet this order. The early days of the pit augured well: on 23rd July Wood wrote to Bowes:

(1) One chaldron waggon carried 53 cwts. of coal, or 16 cwts. of coke.

".....The Pillars (1) are working so large that we are enabled to get 10 or 12 Waggon of Ship Coal per day which we can readily sell at 19/- per Waggon and still make Glass House coal (2) sufficiently good. I expect in a fortnight or so we may increase the ship coal to 16 Waggon per day. The following is the Vend (3) up to this time:

This Pay (4)	:	164 chds (5)
Formerly	:	396 chds (5)

560 chds (5) or approximately

11 Waggon per day." (6)

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- (1) This must mean that the colliery was being worked on the "Pillar and Stall" method of mining. Also known as "Bord and Pillar" or "Bord and Walls", it was the normal method of mining in Durham at that time. It consisted of driving a long passage from the shaft into a seam, and then driving short passages at right-angles from this. After cutting in about 30 yards the hewers then turned both left and right, thus creating pillars of coal 30 yards square. This was believed to be the only safe method of working soft coal which also had an unsafe floor and roof, so that large portions of the seam had to be left to support the roof. Elsewhere in the country the "Long-Wall" method of extraction was used, in which all the coal was removed as the hewers worked back towards the shaft.
 - (2) For Isaac Cookson & Co.
 - (3) The coal trade term for the sale of coal from a colliery.
 - (4) The men employed at collieries in North-East England were paid every fortnight, usually on the first and third Fridays of the month. This fortnightly period was known as a "Pay", "No.1 Pay" being the fortnight beginning on the first Saturday after Christmas.
 - (5) chds = chaldrons. 164 chaldrons = $432\frac{1}{2}$ tons approximately + 396 chaldrons = $1,049\frac{1}{2}$ tons, giving the sum of coal sold in the seven or eight weeks since the colliery commenced production as 1,482 tons.
 - (6) Strathmore MSS, Box 1, Durham County Record Office: letter from Wood to Bowes, 23rd July 1840.

This letter also shows that although the pit had only been in production about two months some coal (the "Ship Coal") was already being exported, though its destination is unknown.

Wood's next task was to secure, subject to the agreement of Bowes and Hutt, a Viewer for the colliery and also a Coal Fitter to handle and promote the sale of ship coal from the colliery. For the first he chose J.W. Gray, who may well have been the man from whom one of the 1838 reports had been commissioned. Wood's choice for the second job was rather curious, as it does not seem that the firm concerned had previously acted as Fitters:

".....I have agreed with Messrs. Palmer, Beckwith & Co. (who have a saw mill at Dunston (1)) and who are very respectable people and have a great Scottish connection and will, I have no doubt, obtain ships and vend the coals regularly." (2)

Here events proved him wrong, for within a few months Messrs. Coxwell & Croser of Newcastle had become the colliery's fitters; but more was to be heard of Messrs. Palmer, Beckwith & Co.

Meanwhile the sinking remained at a standstill because the new pumping engine had not been completed. Although put in hand in April it was still not ready in early September, and it seems likely that no further sinking took place until the spring of 1841. At 33

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- (1) Dunston lies about two miles west of Gateshead on the south bank of the Tyne.
 - (2) Strathmore MSS, Box 1, Durham County Record Office: letter from Wood to Bowes, 27th August 1840.

fathoms the Main Coal seam was proved, five feet thick, and then sinking continued down to the Busty Bank seam, which was proved at 75 fathoms on 25th May 1841. Two other seams were passed through between the Main Coal and the Busty Bank seams, but at two feet and two feet eight inches these were considered too thin to justify being worked.

The four partners do not seem to have been in any hurry to confirm their verbal agreement of partnership by drawing up a Deed of Copartnership. Wheldon drew up drafts of both the Partnership Deed and the lease of the Marley Hill Royalty in the spring of 1840. Bowes signed the latter in April 1840, but it then disappeared, for four months later he wrote to Wheldon asking whether he heard anything about it (1). Bowes received the Partnership draft in May 1840, but not until January 1841 did Wheldon get it back with instructions to draw up certain alterations, and the partners did not finally sign it until 12th August 1841. Unfortunately the Deed is missing, and all that is known about it comes from letters between Bowes and Wheldon. The Partnership took to itself the name of the "Marley Hill Coal Company" (2) and Bowes held by far the greater proportion of the shares. Almost certainly Wood was named as Check-

(1) Bowes MSS, Box 2, Bowes Museum, Barnard Castle: letter from Bowes to Wheldon, 31st August 1840.

(2) The style "Marley Hill Colliery Company" is also found.

viewer, probably at a fixed salary. In the event of any of the partners wishing to dispose of some or all of his shares the other partners had to be given the first refusal of purchasing them. One of Wheldon's original clauses did not, however, become part of the final Deed. When Bowes returned the draft to Wheldon in January 1841 he wrote:

".....You would find the Marley Hill Partnership Deed a good deal altered. There was one clause that I had some hesitation about, viz., that clause which forced the successor or executor of any one of the Partners on his death to sell if the other Partners wished. But this I think would hardly be fair, especially on N.Wood, who evidently looks to this colliery as a provision for his numerous family." (1)

Here Bowes was under a misapprehension, for the income which Wood must have been receiving at that time from his other colliery interests alone would have been sufficient to maintain his "numerous family" in more than comfortable circumstances after his death.

Within a few months of Marley Hill Colliery commencing production Bowes had plans for expansion. Adjoining the Marley Hill Royalty to the east was the Blackburn Fell Royalty, owned by a Mr. Davison of Beamish, near Stanley, and enclosing land owned by Bowes on Hedley Fell. Bowes regarded this as a desirable acquisition and Davison wanted to sell, but negotiations came to nothing.

The most important event of 1841 was undoubtedly the General Election. Bowes was reluctant to stand, but regarded himself as

(1) Bowes MSS, Box 3, Bowes Museum, Barnard Castle: letter from Bowes to Wheldon, 17th January, 1841.

obliged to do so as no other candidate was available. The election campaign was violent - there was a riot at Darlington on 28th June, when the police had to run for their lives - but in the final vote on 6th July Bowes and his fellow Liberal gained the victory. The election was the most expensive which ever occurred in the South Durham constituency, Bowes' expenses alone being £13,000 (1). At the same time Hutt became Member for Gateshead, which he was to hold until his retirement from politics in 1874.

The South Durham election had two results; Bowes vowed that he would never stand for Parliament again, being very bitter about his own supporters ("many of whom would not have supported me if they could have found another candidate" (2)); and it also left him very short of money. At the same time it became clear that Wood's estimate of £6,000 for winning the colliery was too low, and in this position Bowes found himself financially very embarrassed. The Northumberland & Durham District Bank had loaned him a good deal of money towards the winning of the colliery, and were beginning to press for a reduction in the Company's overdraft. In addition it declined to lend Bowes any money towards his personal debts.

Furthermore, the great boom in the coal industry began to slacken in 1841, and from 1842 onwards there was a growing depression, due

(1) Not £30,000 as often stated.

(2) Bowes MSS, Box 3, Bowes Museum, Barnard Castle: letter from Bowes to Wheldon, 26th August 1842.

mainly to a recession in the railway industry. This too made money hard to come by, thus putting financial pressure on the Company at a time when it could least afford it. It is against this generally gloomy background that the years 1842 to 1846 should be seen.

At the outset all seemed prosperous, and the Company continued to think about expansion. During 1841 it leased from Sir Robert Eden the Tanfield and Cawsey Royalty to the south of Marley Hill, and it also took up again the proposal to lease the Blackburn Fell Royalty from Davison. Here an important factor was a new colliery being sunk at Kibblesworth, about two miles east of Marley Hill. In March 1842 the owners of this pit reached the Hutton seam at 20 fathoms and found it hard and of good quality, in contrast to the Hutton coal at Marley Hill, which was rather tender and sometimes became "nothing but black nuttage" (1) when taken out of the ships for the customers. In order to avail themselves of the harder coal further east Wood proposed to his partners that a new winning be made on Blackburn Fell. But the growing depression in trade killed this idea, and also was the most important factor in the Company's decision that it could not work the Tanfield and Cawsey Royalty at a profit. They accordingly began to seek a sub-tenant, and negotiations with Sir Robert Eden and prospective tenants dragged on until January 1844, when the Royalty was taken over by James Joicey,

(1) Strathmore MSS, Box 1, Durham County Record Office: letter from J.W. Gray to Bowes, 17th February 1842.

who was building up a small colliery empire in the Tanfield area.

But during 1841 there occurred the event which was to change the whole course of the Company's history which, allied to the events of 1845 - 1846, was to change the firm from just another small coal company to one of the great firms on the Durham & Northumberland coal-field. How it happened is not recorded, but it was discovered that coal from the Busty seam at Marley Hill made first-class coke, better than virtually everywhere else in West Durham. With the great demand for coke from the railways, and the increasing size of iron industry in North-East England, this could only be regarded as excellent news. At the outset, having no coke ovens of their own, the Company hired some belonging to the Brandling Junction Railway at Gateshead. But they soon found that "the demand for the Coke is greater than our power of producing it" (1), and the need to remedy this problem brought Hutt into the Company's affairs for the first time. On 30th March 1842 Hutt met Wood at Marley Hill, and they discussed very carefully the pros and cons in relation to building their own coke ovens. At first they considered two sites. The first of these alongside the coal staithes on the River Team, not far from the pit, where the Company used to ship a good deal of its coal at this period; but this site was not very suitable for loading coke on board ship (indeed,

(1) Strathmore MSS, Box 1, Durham County Record Office: letter from Hutt to Bowes, undated, but probably written on 23rd March 1842.

it was abandoned altogether not long afterwards), and in addition, Lord Ravensworth, who lived nearby in Ravensworth Castle, raised strong objections to the expected smoke. The other site lay adjacent to the Brandling Junction Railway's staithes in Gateshead, but the partners expected the site to be difficult to obtain, and the transport costs would have been higher than to the Team site. In the event both sites were abandoned in favour of a plan for building the ovens at the colliery itself, and in October 1842 a contract was placed costing £1,000, probably for twenty ovens, the number that Wood had proposed earlier in the year.

These were beehive ovens (so called because of their shape), common in Durham but rare on other coal-fields. The usual plan was to build a number of ovens side by side in a row, the space above the domed top being filled in with rubble and the row bricked in to give vertical or slightly inclined faces and a flat top, on which a narrow gauge tramway was built. Small chaldron waggons of coal were pushed along this and the ovens filled, or "charged", through an opening in its dome, the charge being levelled through the side door to give a depth of 24 - 30 inches. The oven walls were chilled through the "quenching" (see below) of the previous charge, but after the side door had been bricked up leaving a few loose bricks at the top, the heat in the dome, or "arch" of the oven ignited the gases coming from the coal. When the flame was burning over the whole of the charge the bricking of the side door was completed, but leaving two small spaces for the air to enter. In the older ovens

the waste gases issued from the charging hole with the smoke, and usually there was a chimney, often of a considerable height, to increase the draught, but later the gases were conducted to a back flue common to a row of ovens for heating a waste-heat boiler. After 72 hours the flame in the oven was non-luminous, the temperature in the arch now being 1150 - 1200 degrees Centigrade, and at this point the side door bricks were removed, a specified amount of water poured on to the coke, an action known as "quenching", and then the coke was drawn from the oven with long rakes. A ten-foot diameter oven would hold a charge of four tons of dry coal; in a twelve-foot diameter oven about $5\frac{1}{3}$ tons would be required for a 72 hour charge. The sizes of the ovens varied. Some were as small as 6ft diameter, but the more normal sizes were 10, $10\frac{1}{2}$ and 11ft, with some $11\frac{1}{2}$ and 12 ft. There is no record of the size of the Company's first ovens at Marley Hill, but in 1843, the first year for which figures are available, the Company produced just under 4,400 tons.

With the continuing depression in the coal trade the Company's financial position grew steadily worse during the first part of 1843. Basically the problem was one of poor managerial structure, leading to insufficient attention being given to the business, especially the sales side. There were no formal meetings of Partners; Bowes was spending an increasing amount of his time in France; Hutt too spent considerable periods in London, while Wood was far too fully occupied elsewhere to devote detailed attention to affairs.

The storm broke in mid-summer:

".....The Marley Hill Colliery will have to borrow £10,000 or £12,000. I myself can advance £5,000 to the concern, but it would be a more satisfactory arrangement to me if White and Atkinson (1) would allow my bond debts to be transferred to the colliery. They would still have my personal security and in addition that of my Partners as well as that of the colliery, which, tho' a more expensive affair than we contemplated, promises to pay very well." (2)

At first the search for money went quite well. White advanced £3,000 and Atkinson £2,000, and in July 1843 Bowes himself paid £5,000. But even more money was needed, and with coal prices so low Bowes had great difficulty in raising it:

".....I find people here (London) are so afraid of the security of coal property that we shall have very great difficulty in getting the advance of money we expected to the Marley Hill concern, and I am afraid we shall have to borrow a smaller sum on the security of our lives; and I propose myself to advance £3,000 or £4,000 by way of loan." (3)

London proved tight-fisted, and Bowes was refused an advance of £6,000 even on the security of the Colliery lease and the Insurance policy. At the end of August he wrote:

".....We require a sum of £10,000, of which I can advance £4,000 (if I am successful at Doncaster (Races), more)." (4)

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- (1) Nothing is known of these two gentlemen.
 - (2) Bowes MSS, Box 3, Bowes Museum, Barnard Castle: letter from Bowes to Wheldon, 14th June 1843.
 - (3) *ibid.*, letter from Bowes to Wheldon, 23rd August 1843.
 - (4) *ibid.*, letter from Bowes to Wheldon, 31st August 1843.

But only a week later the Bank presented a new Bill (1) for £6,000 of which Bowes had known nothing, and the Bill was dishonoured. Bowes wrote:

".....I have paid £4,000 into the Colliery account with the Bank, which with the balance in hand will enable it to more than meet this Bill. But as there is another due soon, and from this proceeding of the Bank one cannot ascertain what course they will pursue, you will see that the utmost expedition is necessary in procuring this loan, if it is to be got." (2)

Wheldon did his utmost to obtain money for the Company and eventually raised £6,000, to which Bowes himself added another £2,000, making the total amount raised between June and September 1843 £22,000. This proved sufficient for the time being, but the colliery had been heavily mortgaged and the loans would have to be repaid. It was obvious that something was seriously wrong with the Company's affairs, and Bowes was not long in putting his finger on the source of the trouble:

".....Nicholas Wood misled me about the Bills.... I knew they were due in May last, but I was under the impression that they had been renewed for six months, in which I was confirmed by what N. Wood told me." (3)

Unfortunately, in December 1843 Bowes was compelled to retire

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- (1) The colloquial 19th century term for a promissory note, given for a loan.
 - (2) Bowes MSS, Box 3, Bowes Museum, Barnard Castle: letter from Bowes to Wheldon, 6th September 1843.
 - (3) *ibid.*, letter from Bowes to Wheldon, 19th September 1843.

to France after a pursuit round the country to avoid being arrested for placing a bet on a horse at Kempton Races, a man named Russell having obtained a writ under a long-forgotten Act. He was obliged to remain abroad until Lord George Bentinck had succeeded in getting a Bill through the Lords, ostensibly to abolish betting on quoits, crochet and similar games, but including horse racing at the end of a very long list, and he was unable to return until the spring of 1844. In these circumstances it was left to Hutt to carry out a full investigation of the Company's affairs, which he did with characteristic thoroughness. At the end of the year he wrote to Bowes:

".....There appeared to be a loss of between £2 and £3,000 on the colliery account this year, resulting from the reckless manner in which the coals have been freighted. I observed that some cargoes had been sent abroad and to what I have always heard were bad markets - at Quebec, for instance, at 2/6d and at St. Petersburg at 2/11d per ton. I believe I have put a full stop to any such proceedings for the future. It appeared that when our credit accounts had been got up and paid over to the Bank that our accounts would be nearly balanced, but then we had not considered some outstanding debts. I could not ascertain the amount of them, but I believe they will not exceed £5 or £600.... Our examination was very minute of the outgoings of the colliery. I hope we have considerably reduced some of them for the future. But we did not accomplish what I wish to have done, which is an investigation of the application of all the money which has been sunk in the concern.... I will have it done. It ought to appear in the Ledger. On the whole I think that if we can secure Cookson & Co. and keep Prior (1) the Colliery may do pretty well. Of course, if

(1) J.C. Prior appears to have been an influential London coal factor.

trade revives we shall get on the faster." (1)

The basic trouble was that Wood was either unable or unwilling to devote as much time to the Company as it needed; and he also refrained from mentioning until approached certain of his business connections which were related to the Company's well-being, so that Hutt especially became increasingly mistrustful of him.

Only a few days after Hutt's investigation into the colliery's affairs the partners received an inquiry from James Joicey (shortly to be the new tenant of the Tanfield and Cawsey Royalty) asking whether they were interested in letting Marley Hill Colliery to him, obviously thinking that they would be in view of their recent difficulties. Hutt reported the matter to Bowes, saying that he had suggested a rent of £3,000 per annum, but he makes no further comment (2), giving the impression that he was not agreeable to the idea. Nothing more was heard of this offer.

At the end of 1843 the prospects for the colliery were a little brighter. Its affairs had been straightened out, and although it was still heavily in debt, the coal trade was beginning to show signs of improvement. Its coal was becoming increasingly wider known; during 1842 there are references to shipments to the Ipswich Gas Company (3)

(1) Strathmore MSS, Box 1, Durham County Record Office: letter from Hutt to Bowes, 9th December 1843.

(2) *ibid.*, letter from Hutt to Bowes, 21st December 1843.

(3) *ibid.*, letter from J.W. Gray to Bowes, 17th March 1842.

and the London Plate Glass Company (1), while in 1843, in addition to the cargoes sent to Quebec and St. Petersburg, mentioned in Hutt's letter above, ships were being fitted for places as far apart as Aberdeen, Yarmouth (2) and Rouen (3). In addition, the quality of the Marley Hill coke was being acclaimed on all sides.

But new difficulties were already in sight. At the end of December 1843 Hutt wrote to Bowes:

"....We have had some trouble with our Pitmen, who have partaken of the prevailing spirit of discontent. I went up to the pit and saw a deputation of them. I did not find them very unreasonable. There are four or five lawyers amongst them whom Gray must get rid of at the next Binding Time (4). The great majority of our men are not ill-disposed, tho' stupid and rather too ready to listen to the nonsense of F & C (5). There may and probably will be a partial strike in March, but the overmen at Marley Hill think that our men will not join in and Gray says the same." (6)

Hutt's prediction proved only too true. During 1843 there had been growing discontent among the pitmen of Northumberland and

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- (1) Strathmore MSS, Box 1, Durham County Record Office: letter from J.W. Gray to Bowes, 28th April 1842.
 - (2) *ibid.*, letter from Hutt to Bowes, 30th December 1843.
 - (3) *ibid.*, letter from Wood to Bowes, 4th December 1843.
 - (4) In March, when the yearly contract (known as the "Bond") was made between owner and workman.
 - (5) Nothing is known of these gentlemen.
 - (6) Continuation of letter from Hutt to Bowes, 30th December 1843.

Durham concerning the terms of the "Bond", under which the coal-owners engaged workmen each year, his wage and the terms under which the owner was prepared to employ him being stated in the Bond, which the pitmen signed or made their mark, as most of them were illiterate. Under the Bond, which again seems to have been peculiar to the North-East, the workmen virtually signed away their rights for twelve months, and as the owners had the right to reduce wages and owned most of the houses in which the pitmen lived (another feature not usually found elsewhere), thus rendering them liable to eviction, the men were severely hamstrung in their attempts to gain redress. The pitmen drew up four main demands: firstly, that the basic wage should be increased by about 2/- per week; that the men should be secured work yielding 15/- for each week throughout the year, but that they should not be required to work for more than 3/- per day (which they believed would equalise the demand for labour throughout the district and prevent mass unemployment); that the fine levied for sending refuse coal to bank (1) should be abolished and finally that the fine levied for sending up deficient measure should also be abolished. These were put to the owners during March 1844, to be flatly rejected. Thus when the old Bonds expired on 5th April about 32,000 men came out on strike, and in a meeting on Black Fell, near Gateshead, on 8th April attended by over 30,000 of

(1) The local term for the surface.

them, the men resolved to fight to the last.

Nicholas Wood, as the leading figure of the coal trade, was deeply involved in the negotiations and the measures upon which the owners decided. He personally wanted nothing less than unconditional surrender from the men, but at first he thought the strike would be a trifling affair, and even when the strike had been in progress nearly a month he could write:

".....I do not think the contest will be a long one....
I am not very anxious." (1)

Contrary to what Hutt had been told in the previous December, it seems that all the men at Marley Hill came out on 5th April. Yet the Vend sheets for this period show that the colliery continued to supply at least its local customers with coal, and this must have been possible only through a large build-up of stocks at the colliery in the previous months. In the period between 6th April and 18th May the River Vend (2) per Pay remained at about the level it had been before the strike, but the Ship Vend (3) ceased completely for over a month, and in No.10 Pay (4) only 44 chaldrons were sold. In

(1) Strathmore MSS, Box 1, Durham County Record Office: letter from Wood to Bowes, 2nd May 1844.

(2) Coal sold to local customers.

(3) Coal which was exported.

(4) 4th May to 18th May 1844 inclusive.

the next four Pays, i.e. up to 13th July, the position was reversed, the Ship Vend returning to normal while the River Vend was reduced by about two-thirds; in fact, during the latter half of this period the only customers under this heading were the Marley Hill Coke Ovens, the Brandling Junction Railway and Isaac Cookson & Co., by far the greater proportion going to the ovens. Thus it would seem that the partners decided at first to suspend Ship Vend coal in order to retain their local customers, but that subsequently they reversed this, possibly after representations from their fitters, ensuring, however, that sufficient coal was sent to the coke ovens in order to meet demands and provide income from this source, while also doing the best they could for their largest local customers.

By June there was no sign of an end to the strike, though it does seem that a few of the men at Marley Hill had returned to work. In the middle of the month Hutt suggested to Wood that men from other parts of the country be brought in to break the strike and help work in the pits, and Wood sent for men from Wolverhampton; as only about a dozen of these were sent to Marley Hill it is evident that the colliery was rather better placed than many others in the county. Even the importation of "foreigners" did not break the strike, and on 4th July Wood wrote:

".....We have turned the men out of the new houses this week and I have no doubt we shall shortly find

they will be willing to work." (1)

As many employers had evicted their workmen in June or even May, one may fairly assume that the partners adopted a relatively restrained approach to their workmen, which probably accounts for the colliery's unrepresentative trading position. Despite the strike the colliery sold 681 chaldrons in No.14 Pay and 690 in the pay following (2), and on 18th July Wood was able to write that at Marley Hill

".....we are working fully - as much as we would be if the Colliery were at work and the issues in force. The men got from Staffordshire are so well satisfied that I have sent one of them back with the Marley Hill overman to bring 20 or 30 back, part of which I intend sending to Springwell (3)." (4)

At Marley Hill the strike was virtually over by the middle of July except for a few die-hards, but the position was far from happy elsewhere. Wholesale evictions were achieved only with considerable force in some places, and as a result many hundreds of people were compelled to encamp by the road side or on unenclosed ground. Starvation was widespread, though there seems to have been only a small amount of pilfering, and in the insanitary conditions disease

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- (1) Strathmore MSS, Box 1, Durham County Record Office: letter from Wood to Bowes, 4th July 1844.
 - (2) 29th June to 13th July inclusive, and 14th July to 27th July 1844 inclusive.
 - (3) Springwell Colliery was owned by Lord Ravensworth & Partners.
 - (4) *ibid.*, letter from Wood to Bowes, 18th July 1844.

broke out. Nevertheless, in spite of all the distress only 2,000 men had returned to work by the end of July. But with the increasing importation of "foreigners" more and more men gave up the struggle, and by the second week in August the strike was virtually over. The men had to return to work on the owners' terms; but despite all the distress the discontent remained, even if for the time being it was concealed. It was estimated that the strike cost over a quarter of a million pounds (1), but the exact cost to the partners is not recorded. Indeed, despite the strike the coal from Marley Hill sold in 1844 rose to 50,155 tons compared with 44,321 tons in 1843, while coke sales rose from 4,213 tons to 5,170 tons. With coal scarce during the strike (there is at least one recorded instance of a ship bringing coal to Newcastle) the partners may even have made a profit during the months of the strike.

The strike was the final blow to the "Limitation of the Vend". Some of the collieries which had come into production from 1836 onwards refused to join, and those that did could only be accommodated by reducing the quota of existing members. It would seem that, despite Wood's position in the trade, Marley Hill was not a member. Possibly the Committee felt able to allow this as the colliery had virtually no dealings in the London household coal trade. After the strike the "Limitation" became completely unworkable, and was dissolved on

(1) LATIMER, J. "Historical Register of Remarkable Events which have occurred in Northumberland & Durham, Newcastle-upon-Tyne and Berwick-upon-Tweed, 1832 - 1857." Newcastle: "Newcastle Chronicle" Office, 1857, p.183.

3rd May 1845.

The result was disastrous. The huge increase in the production of coal reduced the price per chaldron, which had stood at 20/6d in August 1842, to below 7/-. At the same time came the failure of three northern banks

".....and these banks, being greatly in advance to many of the colliery proprietors, forwarded, in no small degree, the progress of a deplorable crisis. In consequence many collieries fell into the hands of their securities and were either sold at very reduced prices or laid up altogether. Others again changed hands from the inducements held out to new men for entering upon ready-made collieries with stock, etc., at a nominal value." (1)

Although matters appear to have improved during 1844 Marley Hill Colliery was very much in "the hands of its securities", and with Bowes still financially embarrassed (he lost nearly £5,000 when Wheldon's partner admitted fraudulent conversion in May 1845) the only solution seemed to be the incorporation into the partnership of someone who would be willing to invest money, and, if possible, also act as Managing Partner. The first attempt at this came by a very roundabout method. It will be remembered that when the Brandling Junction Railway's branch to Marley Hill Colliery was built Lord Ravensworth claimed the right of wayleave payment over it, although it passed entirely over Bowes' own land. Bowes was irked by this, and when John Berkley, the owner of a new colliery at Burnopfield, about $2\frac{1}{4}$ miles west of Marley Hill, was negotiating with Bowes to

(1) DUNN, M. "Treatise on the Winning and Working of Collieries." Newcastle: Dunn, 1848, p.360.

build a rail link from Marley Hill to Burnopfield, Bowes wrote to Lord Ravensworth, disputing this right and threatening to build an independent link of his own to the Brandling Junction Railway's Tanfield branch. Lord Ravensworth replied by threatening to make the way-leave payments for Marley Hill coal on the Tanfield branch far higher than they were then if Bowes did construct such a line, and so, finding this means of reducing the Company's expenses blocked, he opened negotiations with the railway company, now the Newcastle & Darlington Railway, for a reduction in their charges. This meant meeting the Chairman of the Newcastle & Darlington, the famous George Hudson, referred to by Bowes as "His Majesty Hudson the 1st." (1) An agreement favourable to the partners was made in November 1844, and from it came an attempt to sell Hudson a share in the colliery. The plan seems to have been to sell Hudson half of Bowes' share only, leaving Hutt, Wood and Lady Strathmore with the proportion they already possessed. Hutt made no recorded comment on this move at all, though Wood permitted himself to say that the coking business made it a good concern. But although George Stephenson reported favourably on the concern to Hudson and strongly advised him to take the share offered, Hudson himself seems to have had little interest in the matter, not even asking for particulars of the business, and in the middle of July 1845 Bowes, much to his

(1) Bowes MSS, Box 3, Bowes Museum, Barnard Castle: letter from Bowes to Wheldon, 2nd November 1844.

annoyance, decided to regard the negotiations as having ended and himself a victim of Hudson's perfidy.

Yet the solution to the problem already lay on the partners' own doorstep. For sometime during the summer of 1844 the partners first came into contact with the man who was to transform the Partnership from a small concern owning only one colliery to one of the greatest companies in the British coal industry, and who was himself destined to become one of the truly great Victorian industrialists - Charles Mark Palmer.

Palmer was born in November 1822 in South Shields, the son of a successful businessman who, besides owning a share in Greenland whaler, was one of the partners in the timber merchants Palmer, Beckwith & Co., who had been the first coal fitters of the Marley Hill Coal Company. After being educated at Newcastle his father had sent Charles to France, not so much from faith in a liberal education but probably to learn foreign languages, so that he might later travel the Continent in search of orders - a common ploy of fathers in business at this time. On returning to England the youthful Palmer joined Palmer, Beckwith & Co., but he was not destined to remain long with the firm.

The meeting between Palmer and the Partners was to be momentous for all of them. How it came about is sadly not known. Palmer was only 22, and it may well be that the meeting was purely the result of his own initiative. But whatever the cause Palmer must have made a tremendous impression, for the outcome was a decision to enter into

partnership with him to form a new concern called the "Marley Hill Coking Company". Curiously enough, the partnership agreement, which seems to date from December 1844, was not handled by Wheldon, and there is only one indirect reference to it in correspondence. The result was astonishing. During 1845 a large number of new coke ovens were built, all at Palmer's expense, and the manufacture of fire-bricks for the ovens was begun. At the same time, under the title of "C.M.Palmer & Co.", he took over the whole responsibility for the sale of the Company's coke, and so great was the effect of all this that in the twelve months between December 1844 and December 1845 the Company's sales of coke rose by 380% to 19,607 tons. It was the first, and very striking example, of Palmer's immense ability and energy, the work of a man who saw that the opportunity - to supply top quality coke to a rapidly-increasing market - was there to be taken if it was wanted.

Bowes, Hutt and Wood can only have been very impressed by such a performance, and during the autumn of 1845 negotiations were opened with Palmer with a view to making him a full Partner in the Colliery. This was Palmer's personal opportunity, and he was not slow to act. On 4th November Bowes wrote to Wheldon:

".....I have agreed with Mr. Palmer that the sale of my moiety of the colliery at Marley Hill will date from the 1st of November. You will understand, I think, the way in which the sale is to be effected. I value the colliery at £32,000 and he buys a quarter at £8,000; but as there is a debt on the colliery he does not pay the £8,000 but from that sum is deducted $\frac{1}{4}$ of all the debts and liabilities of the concern on 1st November of every sort, including tradesmen's bills, etc....As he

pays me in Bills which the Bank have agreed to discount, I am to hold the security of his share of the Colliery thus purchased until he finally takes up the Bills." (1)

Later letters show the position more clearly. The sale was to be on the same terms as those abortively offered to Hudson only a few months before, Palmer deriving the whole of his share in the Partnership from Bowes, the other partners having been offered the shares and refused them. The actual admission of Palmer to full membership of the Partnership was later put back to 1st January 1846 as this date was more convenient for making up the books in order to work out how much had to be deducted from the £8,000 which Palmer was to pay Bowes for his share. It is perhaps surprising that a man barely 23 years old should have such money to pay this sum, to say nothing of the money he had already paid to build new coke ovens; probably most of it came from his father. The documents were finally signed by the Partners during the latter half of November 1845 and the early days of December. Again the Deed is missing, and so it is not known in what proportion the Partners held shares. It is clear however, that Palmer held one quarter, and that Bowes was the biggest shareholder even after the sale of part of his holding. It would appear from one of Palmer's letters of 1847 that both Hutt and Wood held less than one-eighth at this stage, though this seems strange. In the event it took some time

(1) Bowes MSS, Box 4, Bowes Museum, Barnard Castle: letter from Bowes to Wheldon, 4th November 1845.

for the accounts of 1845 to be worked out. In July 1847 Palmer wrote (1):

"....The accounts at the end of 1845 will stand thus

Purchase of $\frac{1}{4}$ share of Coll ^y - £32,000	£8,000 - 0 - 0
Joint bond of Partners	£19,000
Debt of Coll ^y as per acct of Dec 1845	£8,960
Interest due you (on loans of 1843)	£765
	<hr/>
	£9,725
Amount of liabilities Dec 1845	
$\frac{1}{4}$ my share (£19,000 + £9,725)	£28,725
	£7,181 -15 - 0
	<hr/>
Due you	<u>£818 - 5 - 0"</u>

Thus the actual monetary transaction was not great. This Deed was in any case abandoned in favour of a new one dated 1st January 1849, which remained in force over fifteen years. Under this Deed, and possibly under its predecessor also, Palmer was named as Managing Partner, having full responsibility for the secretarial, financial and sales aspects of the firm, able to act without reference to the other partners except on the most important matters. Wood was named as Engineer, for which he was paid an annual salary of £500.

Thus the four men and Lady Strathmore were now members of two nominally separate companies, the "Marley Hill Coal Company" and the

(1) Strathmore MSS, Box 2, Durham County Record Office: letter from Palmer to Bowes, 8th July 1847.

"Marley Hill Coking Company". For a short time during 1846 their notepaper bears the heading "Marley Hill Coal & Coking Company", but the old titles subsequently returned. The real change came in November 1847, when the "Marley Hill Coal Company" was changed to the much more imposing title of "John Bowes Esq., & Partners", an alteration for which Palmer was probably responsible, and the firm was to bear Bowes' name until nationalisation one hundred years later. Although the "Marley Hill Coking Company" continued to have a separate existence almost another forty years, the two companies were in practice treated as one with the exception of the accounts, which were always kept separate.

At this point, when the firm was on the threshold of unparalleled expansion, it is interesting to review the progress made by Marley Hill Colliery between 1842 and 1845, such a review being possible because the Vend sheets covering that period have survived (1).

As has been noted above, the Company's fitters after the withdrawal of Palmer, Beckwith & Co. were Messrs. Coxwell & Croser, an interesting firm who were also merchants as well as dealing in shipping and insurance. In the period between December 1842 and December 1843 they handled 24,823 tons of coal, over 5,000 tons more than the whole of the amount sold to local customers. Despite this the firm ceased to handle the Company's trade in January 1845, and it seems that they went out of business. They were replaced by

(1) Strathmore MSS, Box 2, Durham County Record Office.

W.H. Scaife, another Newcastle man, who acted as fitter until Palmer took over this side of the Company's activities. From December 1843 onwards the Company also received contracts from a Mr. J.C. Prior, who seems to have been a London man who made contracts on customers' behalf. In the three years under review the Ship Vend totalled 87,209 tons, or 50.59% of the colliery's coal sales. The amount for 1844 was only slightly above that for 1843, partly because of the strike and partly because more coal was being sent to the coke ovens. This trend continued during 1845. Indeed, it was so marked that whereas the Ship Vend had been 5,000 tons more than the River Vend in 1843 the position was completely reversed by 1845. It is even more strikingly shown by the only vend sheet extant for 1846, which reveals that in the period up to 7th February the Ship Vend was only 1,402 tons compared with the River Vend of 7,094 tons.

Of the 87,209 tons exported between 1843 and 1845 Coxwell & Croser took 43,585 tons, or 49.98% of the total, while Scaife handled 26,357 tons (all in 1845) and Prior 17,267 tons. Some of the destinations of this coal have been mentioned above.

When one examines the River Vend some interesting trends come to light. In 1842 just under a third (6,130 tons) of the total was sent to the Marley Hill Coke Ovens. However, by the end of 1845 the Company, now under Palmer's direction, had not only increased the number of ovens at Marley Hill but had also built ovens at Gateshead as well as renting the ovens there of the Newcastle & Darlington

Railway, and in that year no less than 33,250 tons were sent to these three sets of ovens. It is therefore not surprising to find that the largest proportion of the River Vend - 55.97% - was made into coke. If the coal sold to private coke manufacturers is included, the total tonnage of coal converted into coke becomes 50,527 tons, or 59.34%. No coal was sold to private coke manufacturers after the beginning of 1844.

The largest of the other local customers was easily Isaac Cookson & Co. of South Shields, who owned an extensive glass works. Between 1842 and 1845 they bought 22,616 tons, or just over 26.5% of the total Vend. The firm did not have a regular order, and in some "Pays" took no coal at all. They almost doubled the amount purchased in 1844 compared with 1843, but there was a considerable drop in 1845, probably because the colliery had less coal available for general sale. Nevertheless, they remained the Company's largest private customer, and this continued in the early months of 1846 (when the firm had become R.W. Swinburne & Co.), the firm being one of the Company's only two local customers.

The Company's next largest group of customers were railway companies, who accounted for 8,576 tons in the three years, or just over 10%. Most of this coal was bought by the Brandling Junction Railway, very probably for making coke. This trade continued for a short time after the railway had been absorbed into the Newcastle & Darlington Railway, but ceased in September 1844, after which no coal was sold to railways.

The last of the Company's main coal customers was John Abbot & Co., who owned a large iron foundry in Gateshead. In the period under review they purchased 3,249 tons, or 3.81%. They rarely took more than 70 tons per fortnight but it was a steady trade, and with Cookson they were the only local customers remaining at the end of 1845.

In the three years 172,376 tons of coal were sold, of which the Ship Vend accounted for 87,209 tons and River Vend 85,167 tons. The combined figures for each of the three years show that the amount sold in 1844 was 50,155 tons, an increase of nearly 6,000 tons over 1843, while the figure for 1845 was 77,950 tons, so that, if one makes allowance for the strike, one may reasonably say there was a steady rise in coal sales during the period.

Turning now to the Coke Vend during 1843 - 1845 the most astonishing feature is the rise in sales due to Palmer's influence. In 1843 the amount sold was 4,213 tons, which rose in 1844 to 5,170 tons; yet in 1845 the figure was 19,608 tons. For Palmer not only built more ovens, but he also changed the direction of the Coking Company's sales. Up to 1844 no coke was sold direct to railway companies, and even in that year the amount was only 728 tons, though some may have reached them via the fitters; but with Palmer at the helm the total reached 9,662 tons. Most of this went to the Newcastle & Darlington Railway, but between September 1845 and November 1845 samples were sent to four important railways, and by February 1847 Palmer had railway contracts totalling approximately

2,300 tons per month.

The total amount sold during 1843 - 1845 was 28,991 tons, of which 15,667 tons, or 54.04%, went to the fitters, firstly Coxwell & Croser and then "C.M. Palmer & Co." There is little to show the destination of this coke, though there is one reference early in 1842 to a cargo destined for Nantes (1).

After railway companies the next largest group of customers was iron-founders, of whom the Company had no fewer than eleven during the three years. Between them they took 2,393 tons, or 8.25%. Of these, John Abbot & Co., Hawks, Crawshay & Co. and John Coulthard & Co., all of Gateshead, were the largest customers; most of the others were either single men or companies working on a very small scale. One interesting point is that the Company served virtually all the iron-founders on Tyneside, and while this trade was by no means as important as that with the fitters or the railways, it shows that the Company was willing to supply anyone, whatever the amount.

The remaining 1.87% also went to local customers. Among these were two breweries, a chemical factory, a lead black and paint manufacturer and a fire-brick manufacturer. This diversification of the Company's business shows that at this stage the nature of the colliery's sales was similar to the pattern which had existed in the

(1) Strathmore MSS, Box 1, Durham County Record Office: letter from Hutt to Bowes, undated, but probably written on 23rd March 1842.

coal industry for many years, but that as time wore on there was a growing trend towards the newer industries and the larger firms, and this trend was to be exemplified by the work of Palmer.

Thus the stage was set for the great events of 1846 - 1855. Bowes was now thirty-four years old, and had decided to retire from Parliament at the next election, and from 1847 onwards he was to spend an increasing amount of time in Paris. There he was to buy the Theatre des Varietes and meet Josephine Benoit, Contessa di Montalbo, who he was to marry in August 1854. He helped with the French side of the Company's business, and was largely concerned in obtaining money for it, but as the Partners had no provision for formal meetings he was almost a sleeping partner for the next decade. All major decisions were supposed to receive his consent, though even this was ignored on occasion. William Hutt, who was to become an increasingly noteworthy Member of Parliament during this period, was now forty-four years old, and acted as the link between Bowes and the Company. Not pretending to have any technical knowledge, he nevertheless paid frequent visits to the Company's holdings, often to the embarrassment of those working there, as he would ferret out wastefulness, inefficiency and other things detrimental to the Company. He acted in a small way in negotiating contracts, and occasionally took over full control when Palmer was away. Wood was now fifty years old and received the highest honour of his career when in 1852 he became the first President of the North of England Institute of Mining Engineers. He too gave some help with contracts, though at times he was told

even less of what was going on than Bowes.

The year 1844 saw the beginning of what became known later as the "Railway Mania", and so when Palmer became a full Partner on 1st January 1846 the coal industry was enjoying a growing boom. Palmer was determined to make the Partnership one of the greatest names in the Northumberland and Durham coal-field, and thus in the coal industry generally. The opportunity for this was at hand.

CHAPTER 2.

THE YEARS OF RAPID EXPANSION : 1846 - 1855.

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The years of rapid expansion : 1846 - 1855.

In order that the Partners might gain the greatest possible benefit from the increasing demand for coal and coke, Palmer saw that his main task at Marley Hill was to increase output from the colliery and expand still further the production of coke. To achieve the first would take time, and to make more coal available during this period he proposed during the latter half of 1845 that the Partners should buy Kibblesworth Colliery, which lay about two miles east of Marley Hill and was worked by Messrs. Southern, Hawthorn and Watson, the first-named being Managing Partner and Viewer. Negotiations were opened, and Southern named his price as £27,000. Wood thought this too high, and suggested £24,000. However, Bowes, when informed of the negotiations, strongly disapproved, and with Hutt taking Bowes' side, the negotiations were abandoned in December 1845.

Palmer was thus left to develop the holdings at Marley Hill. To obtain workmen in order to increase output he built forty more houses (1), as well as yet more ovens. At the same time he ordered a new steam winding engine from John Coulthard & Co., which it was estimated would enable the colliery to produce 40 Keels per day (2).

(1) In Durham it was the normal practice for the coal owners to build houses for their workmen; elsewhere, e.g. in South Wales, it was more usual for a contractor to do this and rent houses to the workmen.

(2) About 850 tons per day.

Unfortunately, further poor management on Wood's part upset Palmer's plans. In February 1847, when he was only getting about 22 Keels per day, Palmer wrote to Bowes:

".....The short quantity is in consequence of the mismanagement of Mr. Wood and Gray (1). They had left the pillars too small and the colliery has taken the creep (2). This happened six months ago and nothing was said until I now find it out. It has cost a large sum of money as the Colliery ways have been completely crushed up. I am now told that the creep has stopped..... The absurdity of Mr. Wood giving orders how to work at a Pit like Marley Hill without examining the place: all I can get from Gray is that Mr. Wood told him. It is really provoking." (3)

Palmer was justifiably annoyed, because in the first five months of 1846 the Colliery had made a profit of nearly £1,130, while the coking profit had been much more. Even worse, he was obliged to buy coal from his neighbours - and competitors - to fulfil the contracts he had made. The target of 40 Keels per day was eventually achieved in the early summer of 1847. When one considers that this was equivalent to approximately 4,250 tons per 5½ day week, or a quarter of a million tons per year, it is possible to see the extent of Palmer's achievement, remembering that the vend for 1845, only two years before, had been 77,950 tons. Moreover, there can have been very few collieries on the coal-field producing over 200,000 tons per year in 1847, again

- (1) The Marley Hill Colliery Viewer.
- (2) The local term for underground mining subsidence.
- (3) Strathmore MSS, Box 2, Durham County Record Office: letter from Palmer to Bowes, 24th February 1847.

a measure of Palmer's impact.

This great expansion in coal production was matched in coke production too. By February 1847 the coke ovens were capable of making 6,000 tons per month, or 72,000 tons per year, a far cry from the 4,213 tons of 1843 or even the 19,607 tons of 1845. In February 1847 Palmer listed his contracts as follows:

"800 tons about	York & Newcastle Railway
200 "	" Newcastle & North Shields Railway
280 "	" Manchester & Birmingham Railway
220 "	" Newcastle & Carlisle Railway
800 "	" Lancaster & Carlisle Railway
1,400 "	" Pinto, Perez & Co. (1)
1,200 "	" Blackwall (2)
<hr/>	
4,900 tons monthly."	(3)

He also had an application for coke from Baron Rothschild, and in the latter half of 1847 the Partners were selling almost all the coke they could produce. It will be noted that nearly half of the above was sold to railways, while the Blackwall figure was also destined for railway consumption - and that no iron-founder appears in the list; the great expansion of the Durham iron industry, which produced

(1) Apparently a firm of coke fitters.

(2) See below.

(3) Strathmore MSS, Box 2, Durham County Record Office: letter from Palmer to Bowes, 1st February 1847.

only 20,000 tons of pig iron in 1847, was not to occur until the discovery of the Cleveland ores in 1849 (1).

But Palmer fully realised that he needed to expand his market if the growing productive capacity at Marley Hill was to be used to the full, and here he became involved in two schemes initiated by Wood. The first of these was an attempt by the northern coal-owners, led by Wood, to capture the potentially-valuable French railway market. The precise details of this plan are lacking, but they involved shipping coal to Havre for conveyance to Paris on the Paris & Havre Railway. Agreements were made with certain French coal fitters (most of whom were Englishmen), and in December 1845 negotiations were opened with the Paris & Havre Railway. At this point Bowes took a hand by investigating personally the state of the French coal market, which Wood had apparently not done, and reported against the scheme, suggesting instead that a cargo of coals be sent to test the market's reaction. It seems that the freight rates were so high that there was only a fairly low profit margin, and in addition, there were doubts about the reliability of Frenchmen and whether they would honour contracts made with them. Bowes' comments ended Hutt's support, and the Partners withdrew from the scheme. In January 1846 Hutt wrote:

".....N.W. is vexed about the result of the Havre negotiations, though he does not avow it. I really think he

(1) MOTT, R. (ed) "A History of Coke Making". Cambridge: Cambridge University Press, 1936, p.44.

had become so épris that in defiance of the demonstration of its imprudence he would have gone on with it. I cannot understand him." (1)

But Palmer did not share Hutt's view, and took up the idea himself, though of course only on behalf of the Marley Hill Coal Company. At the end of January 1846 he went to Paris to review the situation, and in April he shipped some samples of Marley Hill coal to Paris to test the market. Hutt still had his doubts about the French fitters:

".....They appear to have little knowledge of their undertaking, and the contract which they have made with Palmer is so completely one-sided that it has convinced me more than anything that they are not the people who will set the Louvre on fire with the coals of Newcastle." (2)

Nevertheless, in August 1846 Palmer set out again. His first success was to obtain a contract with Allcard, Buddicombe & Co. in Paris for 21,000 tons. He and Hutt were very pleased with this, as the firm was one of the biggest of the French fitters, supplying a number of French railways, and he had won the day although his was the highest tender submitted, a tribute to the quality of Marley Hill coal. Next Palmer went on to Belgium in order to assess what influence the Belgian coal-owners might have on the French market. He examined the mines in person, and found that working costs were high and the coal of indifferent quality, so that there seemed little to fear from this

(1) Strathmore MSS, Box 2, Durham County Record Office: letter from Hutt to Bowes, 24th January 1846.

(2) *ibid.*, letter from Hutt to Bowes, 10th April 1846.

direction.

By this time Hutt was as enthusiastic as Palmer about trying to capture the French market, believing that it was theirs for the asking, as few English fitters thought it was anything else but an unnecessary and foolish risk. The Partners were now pressing the railway company to grant them terms protecting them from the effects of competition and securing to them the monopoly of the trade, offering in return to supply and maintain their own waggons on the line. In September 1846 Palmer and Hutt calculated that the price of Marley Hill gas coal (1) delivered at the Batignolles in Paris would be 33.81 francs, while the capital which would have to be raised for the scheme was estimated at £30,000.

The matter came to a head soon after when Bowes drew up a long review of the proposals, comparing the probable cost of various types of coal from North-East England in Paris with the cost of French and Belgian coal there. Using all the calculations made by Wood, Palmer and another Newcastle fitter named Muston, Bowes estimated that at the Batignolles English gas coal would cost 39.47 francs per 1000 kilos, steam coal 41.39 francs and household coal 42.66 francs. English gas coal had formerly been used in producing gas to light the Paris streets, but it had been ousted by French and Belgian coal, which could be supplied 9.47 francs cheaper than his estimate. English coal for manufacturing purposes he calculated would be 13.82 francs

(1) Presumably from the Hutton seam.

dearer and household coal 6.5 francs dearer. The only coal which it seemed might be introduced into Paris with some hope of success would be a coking coal which could also be adapted for iron and other manufacturing purposes where an absence of sulphur, combined with great heat, was required. Here the Belgian and North French coal was unsuitable, while the cost of suitable coal from St. Etienne was higher than the estimated cost of English coal. Bowes summed up:

".....On the whole it does not appear that the prospect of the Paris market is very encouraging, but tho' I have great doubts myself whether we should in the end be warranted in risking so large a capital as £30,000, I think it would still be advisable to send samples of the different kinds of coal at once to Paris on trial. Whether, supposing the Railway Companies would agree to the proposal that the sum guaranteed should be made up out of dues on coal sent to intermediate stations between Havre and Paris, the superiority of railway conveyance over the present modes of communication would justify the outlay of such a large sum as £30,000 would require serious consideration." (1)

This report virtually killed the scheme, but Palmer decided to go to Paris again to see whether favourable terms could be made with the Paris & Havre Railway, presumably with the view to introducing coking coal into Paris. Hutt urged Bowes, who was still in Paris, to aid Palmer in this, adding:

".....The business must be settled now or never and I have every confidence in your sound judgement and prudence. I would not be bound by Palmer, though I

(1) This review (Strathmore MSS, Box 2, Durham County Record Office) appears to have been a preliminary draft of a letter, probably to Hutt, and probably written towards the end of September 1846.

think very well of him. He is a little too speculative perhaps but he is clear-sighted and full of activity and energy." (1)

But the railway company demanded terms higher than Palmer was prepared to accept, and the negotiations fell through. In December 1846 he went to London to engage a man named Edward Blount (a partner in one of the London banking companies with a special knowledge of the French coal trade) to act for him in France. On 29th he wrote to Bowes:

".....I don't think anything more can be done now until the Railway Coy are brought to their senses, and it is only by letting them run fast that we shall make our own terms. You might tell Blount that we were tired of them and that when they become more liberal in their views we would be glad to hear from him." (2)

In fact Palmer's hopes were to be dashed, for the scheme was finally abandoned in September 1847. Blount remained as the Partners' agent, but Palmer frequently found him inactive, and he brought the firm little business. Even the contract for 21,000 tons which Palmer had obtained on his summer tour proved a source of dispute, although it did lead eventually to further orders.

The second of Wood's schemes, again with the backing of a consortium of northern coal-owners, seems to have been an attempt to regain control of the London market, where the north had been losing ground steadily to other areas, particularly Staffordshire. Again

(1) Strathmore MSS, Box 2, Durham County Record Office: letter from Hutt to Bowes, 29th September 1846.

(2) *ibid.*, letter from Palmer to Bowes, 29th December 1846.

the details are obscure. It seems the Marley Hill Coal Company had an interest, although it was probably not financial. The plan consisted of purchasing a dock at Blackwall on the River Thames near Croydon, and from this constructing a railway line called the Thames Junction Railway to join with the proposed Croydon Railway, which would itself join the South Eastern Railway near Bricklayers Arms Station. The dock was the property of the Grand Surrey Canal, which had passed into railway ownership in 1836. A stationary engine was to be erected at Blackwall to unload the coal from the ships. But perhaps the most interesting point of the plan was the decision to build coke ovens at Blackwall, and offer coke made from North-Eastern coal to railway companies in the area. Northern coal-owners had met with little success in their attempts to secure the market in Southern England by supplying coke direct from ovens in the North-East. The owners therefore felt that if coke could be manufactured in the market area it would be cheaper and many more orders would be obtained.

By December 1845 the greater part of the Thames Junction Railway was completed, at least so Hutt thought, and a start had just been made on building the ovens. The success of the venture seemed assured when the Eastern Counties Railway, another of those in the Hudson empire, agreed to purchase all its coke from Blackwall. However, when Hutt visited the scene of operations in January 1846 he found a very different picture. He reported angrily to Bowes that the railway

".....will not be open for months. It will not be open for two years at the rate at which it is proceeding. I found six men at work and they are proceeding with the deliberation of German post boys.... The work is now going on at a rate which is quite ridiculous. I floundered about knee deep in mud and clay and often on all fours to the astonishment of the five men who are hired to put up the piling and who have evidently been little accustomed to being overlooked. I dare say they thought I was not right in the head." (1)

Hutt's annoyance stirred up matters. Within three months the railway was open, although it was some months more before the works at Blackwall were complete.

Meanwhile Wood went ahead with his plan to form a company to operate this concern. In July 1846 a firm was formed with the imposing title of the "Northumberland & Durham Coal Company", consisting of three Newcastle coal fitters in Wood, N. Muston and W. Philipson, a Colonel Gray, Hon. H.T. Liddell (2) and John Bowes; another Newcastle fitter, H.M.V. Morton, was appointed as the Company's agent. With Liddell and Bowes on the Board, it was virtually a joint subsidiary company of Lord Ravensworth & Partners and the Marley Hill Coal Company. The new company took over the Surrey Dock on a long lease, and all seemed set fair. But when Palmer visited Blackwall in September 1846 he found that the business was being "bungled sadly" (3),

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- (1) Strathmore MSS, Box 2, Durham County Record Office: letter from Hutt to Bowes, 24th January 1846 - a good example of Hutt's participation in affairs.
 - (2) Liddell was the eldest son of Lord Ravensworth. At some period during the early 1840's he had taken over his father's share in Lord Ravensworth & Partners.
 - (3) *ibid.*, letter from Hutt to Bowes, 17th September 1846.

and the quality of the coke was so poor that the Eastern Counties Railway had complained. The company made a small profit up to November, but by this time Wood had decided that the business was far too unwieldy. In December 1846 he came to an agreement with the Commercial Dock Company under which the latter took over the Dock, but under a series of very complicated conditions. At the same time the South Eastern Railway took over responsibility for the line between the Docks and the Bricklayers Arms Station. The net result was to reduce the Northumberland & Durham Coal Company to a purely distributive concern, renting parts of the docks and also coal depots and other accommodation on the South Eastern Railway. Even in this form it proved very beneficial to the Partners, for in January 1847 Palmer signed a contract with Morton to supply the Northumberland & Durham Coal Company with 72,000 tons of coal per year for ten years. Wood's plan had not brought his hopes to fruition - but its possibilities were not lost on Palmer.

Not only had Palmer been engaged on expanding production at Marley Hill, attempting to gain a foothold in the French market and increasing his sales in London, he also toured the country canvassing for trade, being especially successful in Cumberland and Lancashire. Moreover, the year 1846 also saw another opportunity for enlarging the firm. In September 1846 Crook Bank Colliery, a small concern about $1\frac{1}{4}$ miles west of Marley Hill, was offered to the Partners on favourable terms. It was connected to the railway line between Marley Hill and Burnopfield Colliery, about three miles south-

west of Marley Hill, which the owner of Burnopfield, John Berkley of Newcastle, had built to enable his coal to be conveyed down the Tanfield branch. As the line almost certainly did not come into operation until early in 1845, presumably Crook Bank Colliery also dates from this year. Its owners are unknown, but they were to go bankrupt shortly afterwards, and the fear of their approaching insolvency was probably the reason for the offer to the Partners. Hutt, however, opposed the purchase on the grounds that the colliery's coal made only inferior coke, and the offer was refused.

Palmer, on the other hand, was still eager to acquire Kibblesworth Colliery, and at the end of 1846, this time with the approval of all the Partners, he approached George Southern again, offering £23,000 for it, only for Southern to turn him down.

Now Kibblesworth Colliery was separated from Marley Hill by a moor about 570ft high called Birk Heads, making communication between the two very difficult, and in addition it was a gas coal colliery, so that Palmer's interest in it when the Partners were primarily coke manufacturers would at first sight seem strange. But Palmer was suffering badly from his efforts to improve output from Marley Hill. For the Tanfield branch of the York and Newcastle Railway, on which Palmer was dependent to convey coal and coke for shipment at Gateshead or South Shields, served not only Marley Hill but also Crookbank and Burnopfield Collieries (via Marley Hill), Andrews House Colliery (owned by the Northern Coal Mining Company), East Tanfield and Tanfield Lea Collieries (both owned by James Joicey) and Tanfield Moor Colliery

(owned by John Berkley). Moreover, the branch at this time was worked entirely by rope haulage, and with so many collieries on the line severe congestion ensued. In addition, all the waggons were supplied by the railway company (unlike South Wales, where the coal masters owned the waggons and the railways merely worked them through to the ports), so that the collieries were completely dependent on the railway and obliged to accept whatever demands it chose to make. At the same time the lack of adequate shipping facilities on the Tyne made the supply of waggons even more capricious than they were as a result of congestion.

Now Kibblesworth Colliery was connected by a private railway to Springwell Colliery, which lay about four miles south-east of Gateshead and was owned by Lord Ravensworth & Partners, of which of course Bowes was a member. Three rope-worked inclines, all operated by stationary engines, took the line from Kibblesworth across the Team Valley to Springwell, passing on the way Mount Moor Colliery, also owned by Lord Ravensworth & Partners, but closed in 1840. From Springwell the line ran for a further $5\frac{1}{2}$ miles to private staithes on the Tyne at Jarrow, approximately four miles of which was worked by locomotives (1). This line was in poor condition, and Hutt at least feared it would fall into the grasping hands of George Hudson, who as Chairman of the York & Newcastle Railway controlled nearly all the

(1) The section from Jarrow to Mount Moor Colliery was opened in 1826, and the extension to Kibblesworth in 1842.

public lines in the area. The implications of this position were obvious; Palmer's only mistake was to try to bite off more than he could chew.

For when Palmer first made his views known in February 1847 he did not merely want to build a connecting link between Marley Hill and Kibblesworth - a suggestion which had been made to Bowes as early as July 1845 by John Berkley, who even offered to defray half the expense of a survey; he also wanted to form, in conjunction with H.T. Liddell, a new company to run the railway and also purchase Kibblesworth and Springwell Collieries. The actual details of the plan were altered more than once, but in its final form it was explained to Bowes in August 1847:

".....With reference to the Marley Hill, Kibblesworth & Springwell Railway scheme.... Mr. Hutt requested me to write to you on the subject as the best means of getting my views carried or the affair dropped entirely.

Marley Hill is now enabled to work 40 Keels of coals daily, out of which we have 18 - 20 Keels for shipment, also 200 - 300 tons of coke daily to be sent down the line. We are continuously being stopped for want of waggons; this arises from the want of shipping places at Shields, the difficulty of increasing facilities on the railway to meet the traffic and partly through want of waggons. We have been suffering daily up to this time and we have never exceeded 35 Keels but on an average 30 Keels and not more than 150 tons of coke daily, so that I see little chance of getting our full workings away. Besides, all the other collieries are likely to increase; for instance, Mr. Berkley is only sending away 5 - 6 Keels daily instead of the 25 - 30 Keels as he should do to make such a place pay. It is therefore quite evident the present railway is not capable of carrying the quantity we require, and we must either get them to increase their powers greatly or find an outlet of our own. If we could get the Springwell and Kibblesworth (Collieries) and a line to Marley Hill united it could be worked at a much cheaper rate than in 3 concerns, it would be a shorter line and would save the Marley

Hill owners at least $1/6$ per chaldron - that is, if it were under one company and under one management. If the Springwell line had to remain as it is at present it could not on any account give us the accomodation we require and I would not on any account recommend the outlay for the Kibblesworth line (1) and the formation of the line to Kibblesworth. My great objection to the scheme is that it increases the debt over us which is not desireable at the present time, but I have great confidence in the affair paying us well.

The plan I would propose to carry out this line of railway is that the Springwell line (2) should be taken at a valuation and paid for by Mr. Liddell and yourself, that is, buying the share of Lord Wharnccliffe, the amount of such purchase to be passed to your credit in the Railway Coy. The Kibblesworth Railway should be bought by the Marley Hill owners as well as the formation of the Railway to Kibblesworth. There would only be money for the latter required, the amount of purchase and formation being passed to the credit of Mr. Hutt, Mr. Wood and myself. The shares of the Railway Company would be held:

Mr. Liddell	$1/4$
Mr. Bowes	$1/4$
Mr. Hutt	$1/6$
Mr. Wood	$1/6$
Myself	$1/6$

I am of the opinion, so is Mr. Wood, that the York and Newcastle Railway would not object to our making the line since we would continue to send all they could take." (3)

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- (1) The section between Kibblesworth and Mount Moor Collieries, owned by Southern - the probable reason for Palmer's interest in the colliery, though he nowhere states this.
 - (2) The section between Mount Moor Colliery and Jarrow.
 - (3) Strathmore MSS, Box 2, Durham County Record Office: letter from Palmer to Bowes, 17th August 1847.

Earlier in the year he had worked out the details in a letter to Hutt:

".....The following is a rough calculation of what the Marley Hill owners would derive from this arrangement:

11 miles from Marley Hill to Jarrow @ 2d per chal [dron] per mile	1 - 10
Shipping and finding drops	6
Waggons 11 miles $\frac{1}{2}$ d per chal [dron] per mile	5 $\frac{1}{2}$
Wayleave to average about 1d	11
	<hr/>
	3 - 8 $\frac{1}{2}$
 Present dues to Shields 4 - 7 $\frac{1}{2}$	
Wayleave 4	
	<hr/>
	4 - 11 $\frac{1}{2}$
	<hr/>
	1 - 3

Calculate on 27,000 chaldrons of coals
@ 1/6 £1,687 - 15

" " 600 tons of coke weekly
for shipment - 300 chal [dron] s =
15,600 per annum @ 1/- 780 - 0

£2,467 - 15

The Springwell and Kibblesworth Collieries would make 1/- per chal [dron] per mile = £1,597." (1)

The whole plan was really far too complicated. The formation of the new company depended on the willingness of both Lord Ravensworth

(1) Strathmore MSS, Box 2, Durham County Record Office: letter from Palmer to Hutt, 15th February 1847 (sent on by Hutt to Bowes).

& Partners and George Southern to sell their collieries (otherwise it would not own the line between Kibblesworth and Springwell). Southern had just refused, while Springwell was the only colliery saving Lord Ravensworth & Partners from complete insolvency, so that it was unlikely that either would be willing to sell. Moreover, its success, as Palmer admitted in the same letter to Hutt, depended on persuading other colliery owners to send their coal down the new line - and this when Palmer himself did not intend to use the new line to the full because it would be cheaper to send coal to Gateshead via the old route.

Moreover, the scheme would create a third company when a much better plan would have been to combine all three collieries under one company, and in any case it would have added considerably to the Marley Hill owners' debt at a time of depression.

In the event Bowes was very lukewarm about the whole idea, and Palmer was asked to approach the York, Newcastle & Berwick Railway (as it had become in July 1847) to see whether they would grant any reduction in dues. Here he found the railway company very accommodating, and so in November 1847 the whole scheme was laid aside "for consideration when money is more plentiful" (1), a sign that Palmer thought too much of the idea to abandon it entirely.

The year saw a further expansion of activities and trade. A

(1) Strathmore MSS, Box 2, Durham County Record Office: letter from Palmer to Bowes, 11th November 1847.

tour in Scotland by Palmer produced contracts for coke with the North British and Edinburgh & Glasgow Railways, in addition to those listed earlier. The Partners also took over some coke ovens which had been erected at Lowestoft, apparently by the Northumberland & Durham Coal Company. With coke from these the Partners hoped to capture a large part of the trade in East Anglia. The ovens were sub-let to a contractor, coal being supplied from Marley Hill.

In November 1847 the "Marley Hill Coal Company" became "John Bowes, Esq., & Partners" (1), a less parochial and more imposing title probably inspired by Palmer. The firm was to retain this name until the nationalisation of the coal industry 100 years later.

Despite its growing fame in the coal trade, the firm still owned only one colliery. But Palmer fully realised that Marley Hill Colliery alone could never cope with all the opportunities which he saw before him, and so began the long process of buying - and selling - collieries. The first to be absorbed was Crook Bank Colliery, which lay approximately half way between Marley Hill and Burnopfield. Since it had been offered to the Partners in September 1846 its owners had gone bankrupt; they are unknown, but a letter from Bowes to his Land Agent in January 1847 suggests that the Viewer was a

(1) The old title took many years to pass out of use.

"Mr. Carr, who is, I believe, carrying on the concern for the benefit of the creditors" (1). It passed into the Partners' possession during the first fortnight of December 1847 "under very curious circumstances" (2), and without previous consultation with Bowes, who was told that "the circumstances of our getting her..... are too long for a letter to explain" (2). It was a very small colliery sunk only to the Main Coal seam, and the price was only £4,000. It was a useful purchase, despite Hutt's earlier view, as it lay close to the Marley Hill Royalty. As a result Marley Hill coal could be worked from her and so relieve the pressure on Marley Hill Colliery, Bowes waiving the outstroke rent (3) normally payable in such circumstances. Palmer had plans to sink the colliery to the Busty Bank seam, but in the event this was not done.

With Crookbank (4) purchased, Palmer soon began to think about Burnopfield Colliery, the pit at the end of the railway line from Marley Hill. This colliery, otherwise known as the Hobson Pit, had

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- (1) Bowes MSS, Box 4, Bowes Museum, Barnard Castle: letter from Bowes to R. Dent, 9th January 1847.
 - (2) Strathmore MSS, Box 2, Durham County Record Office: letter from Palmer to Bowes, 13th December 1847.
 - (3) If coal from a royalty was drawn at a colliery on an adjoining royalty, the owner of the royalty from which coal was being taken was entitled to charge what was known as "outstroke rent".
 - (4) This soon became the more normal spelling.

been sunk in 1843 by John Berkley of Newcastle, apparently in partnership with a man named Patrick. The railway to it had been built at Berkley's expense, and included an incline just west of the colliery which took the line down to Crookgate and which was worked by a stationary engine. Most of the line passed over Bowes' land, and while Bowes was quite prepared to see the line built he refused to grant a wayleave for the passage of coke, and Berkley was forced to build his coke ovens at his other colliery on the royalty at Tanfield Moor. In May 1847 he also went bankrupt, and the two collieries passed into the hands of his creditors, of whom the largest was the Northumberland & Durham District Bank, and worked for them by a man named John Henderson. Palmer opened negotiations in the spring of 1848, and after much bargaining a price of £22,000 was agreed in October 1848. At this point a series of disputes broke out between Henderson and the Bank, and the final agreement was not signed until 1st November 1849. Thus the Partners now owned four collieries, three in a compact unit linked by a private railway and the fourth some distance away on the Tanfield Branch.

The railway from Marley Hill to the bottom of the Hobson Bank incline at Crookgate was originally worked by horses, but in June 1847 Palmer bought at least two locomotives for shunting at Marley Hill, and it is likely that the whole line was worked by locomotives by 1850, if not before.

Meanwhile Palmer was busy expanding trade, which was even more noteworthy in a time of growing depression in the industry as the

Railway Mania collapsed. Seeing that the opening of the Tweed Bridge at Berwick would open up trade between England and Scotland, he frequently visited Scotland in search of possible contracts. At the same time he opened up for himself the Irish market, and was then approached by the London & North Western Railway with a view to supplying them with 80,000 tons of coke annually for at least five years. Such a contract meant building 150 more ovens at £35 each, but the Partners decided it was worth the risk. In the middle of these negotiations Hutt wrote:

"..... At Marley Hill you see now the waggons of nearly all the Railways in Scotland loading with coke... We shall be the primum mobile of Scotland, we are pretty sure to act in the same way for Ireland and we only want Blount to complete the executions of his plan when, with the L[ondon] & North Western contract, we may assume the ancient title of British Royalty and call ourselves Kings (Coke) of Gt. Britain, France and Ireland and the town of Berwick-upon-Tweed." (1)

But Hutt was to find that pride comes before a fall. Blount remained indolent, and to Palmer's extreme annoyance the London & North Western Railway proved to be only trifling with the Partners in order to induce the firm with whom they actually wished to close to offer a lower price.

Nevertheless, it is reported that in 1849 there were 424 beehive coke ovens at Marley Hill with another 200 to be built (2). In

(1) Strathmore MSS, Box 2, Durham County Record Office: letter from Hutt to Bowes, 16th October 1848.

(2) MOTT, R.A., op.cit., p.48.

addition to these and those at Blackwall and Lowestoft, there is evidence that during this period coke ovens were also built at Dublin and Belfast, and possibly at Edinburgh and Dieppe, though this is uncertain. With so many ovens there is little doubt that the Partners were now the largest producers of coke in the country, the only other firm of comparable size being Joseph Pease & Company at Crook.

Despite all this, Palmer was looking out for more collieries and ovens. In June 1848 he and Wood went to inspect Pontop and Derwent Collieries, which belonged to Jonathan Richardson, the Managing Director of the Northumberland & Durham District Bank. Palmer thought well of them, but Hutt did not, and for a time nothing was done. However, in January 1849 Palmer concluded an agreement with Richardson under which the Partners leased the latter's Pontop Ovens, of which there were 100; another 100 were to be built, and the rent was to be £1,000 per annum for 21 years. But Palmer soon found that the ovens were in poor condition, and with Richardson failing to supply the coal for them as promised, this agreement was rescinded in favour of a new one in July 1850. Under this the Partners purchased Pontop Colliery, which at that time was derelict, and agreed to sink a new pit there, Richardson providing some of the money (1). To provide coal for the Pontop Ovens the Partners agreed

(1) It is possible that the agreement to purchase Pontop predates the rest of the arrangements slightly, but there is no direct evidence.

to take a short lease of Richardson's Medomsley, Harelaw and Dipton Collieries, which were to be handed back when the new pit at Pontop commenced production. Of these three, only Medomsley was actually working, and there is no evidence to suggest that the others raised any coal during the Partners' tenure of them. To supply coking coal Medomsley Colliery was to be sunk from the Main Coal seam to the Busty seam, Richardson again providing the money. The new, or South Pit, at Pontop began producing coal in the spring of 1852, when Medomsley was handed back. The lease of the ovens there had been converted into the purchase of them by December 1854.

In the autumn of 1849 the Partners purchased another colliery - Norwood Colliery, near Dunston. This was a small concern, and its previous owners are not recorded; it appears to have been purchased on Wood's recommendation, though it is not clear for what purpose. It was worked for a short time, but needed extensive modernisation, and during the 1850's it was closed, to remain thus for nearly twenty years.

Although the plan to link Marley Hill to the Kibblesworth and Springwell railway had been laid aside in November 1847, Palmer had not forgotten it, and his next major plan grew out of it. As this was to prove a turning point in the firm's history, its background needs to be discussed in full, and so one must look again at Lord Ravensworth & Partners. By 1849 the affairs of this older partnership had become very involved. Everything had gone fairly well up to 1845; but in this year Lord Wharnccliffe died, and the new Earl

absolutely refused to have anything to do with the Partnership's affairs. Liddell first proposed that he and Bowes should buy Lord Wharncliffe's share, which had split up among the various creditors of the late Earl's estate. This plan having fallen through, Liddell and Bowes found that the concern was making an ever-increasing loss, which in 1848 alone totalled £20,000, and by the end of 1849 the accumulated loss was £110,000. The position was further complicated by the death in 1849 of Lord Bute, one of the claimants of Lord Wharncliffe's estate, and also a creditor of the Partnership, and his estate also passed to Trustees. But worst of all, although the Partnership could buy and sell collieries, Bowes himself, under the terms of his father's will, had no power to sell his share in it. An Act of Parliament of 1847 had given him this power, but it required to be signed by all of the late Earl's Trustees, and one of them not only refused to sign it but disappeared into France, so that the Act remained inoperative. At the beginning of 1849 the Partnership owned five collieries: Tyne Main and Springwell (and Mount Moor, closed since 1840) in County Durham, and Killingworth, Burradon (1) and Seaton Burn in Northumberland, of which Springwell was the only one making a profit, while Killingworth, a household coal colliery, was making the greatest loss. Bowes set about drawing up a new Bill to give him power to sell his share, and in the meantime he

(1) The alternative spelling "Burraton" is almost as common; it was always used by Wood.

and Liddell resolved to sell the collieries as soon as possible. The coal trade was by now fairly depressed, but nevertheless Wood managed to find a purchaser for Burradon at £11,000 in October 1849, and shortly afterwards Tyne Main was sold for £3,000.

In this situation Palmer saw a great opportunity for John Bowes & Partners, especially from the point of view of linking Marley Hill to Kibblesworth and being able to ship his coal at Jarrow Staithes, and in August 1849 he wrote to Bowes:

".....Mr. Wood... and Mr. Hutt... both fully concur in the policy of having an independent outlet for the produce of Marley Hill and the adjoining collieries, and as the "partnership" are about disposing or letting the Springwell Colliery and Railway I really think it would be a prudent and safe step to endeavor to take it at a yearly rent, as I assure you from the changes in railway management in the North we must not throw ourselves entirely in their hands. You are perhaps aware Mr. Joicey and Mr. Southern are both looking after the concern and propose offering for it. Mr. Wood has a better opinion of the former than I have; in fact, I think it would be a dangerous thing to let him have it, for should he join with Southern and get his coals down by a cheaper and shorter route than us it would be a very serious matter. Already he is underselling us by 6d or 9d p [er] ton, although he pays higher dues than we do. You will therefore see the position we would be placed in if he could sell and have a profit at the price cost of our coals. I think moreover it would be more satisfactory for us to have the concern... The contract we can get from the London Gas Co. would make the rent safe for at least three years." (1)

Palmer's view, therefore, was that the Marley Hill Partners should take over Springwell Colliery and its railway to Jarrow to give them a cheaper outlet once the link from Marley Hill to Kibblesworth was con-

(1) Strathmore MSS, Box 2, Durham County Record Office: letter from Palmer to Bowes, 6th August 1849. Joicey was expanding almost as rapidly as the Partners, concentrating on the areas around the villages of Tanfield and Beamish.

structed, thus getting the better of Joicey, who was causing a good deal of worry. But the situation was not as uncomplicated as Palmer chose to see it, for if Lord Ravensworth & Partners leased Springwell they would have no profit to set against the losses from their other collieries. Wood sketched this out in a letter to Palmer a few weeks later - a letter interesting for his comments on the size and importance of John Bowes & Partners:

".....I think with you and Mr. Hutt that it is essential to the security of the Marley Hill concerns, which are now almost alarmingly important and extensive, that we should have the Springwell Railway and consequently the Colliery - and connected to Norwood the Whickham Manor and Shipcote and Bensham coal (1).... For the Marley Hill Co., once making up their minds to encounter the risk, there is no doubt that they can work the concerns to be able to offer more advantageous terms to the Partnership than anyone else can afford.

Then comes the question of Seaton Burn and Killingworth, which though not necessarily adjunct to such a measure are in some degree mixed up with such a scheme. For if they let their Bensham collieries (2) they must as a matter of necessity almost let or sell their North^d (3) collieries, for it would never do for them to carry on these collieries, parting with those where there is less risk. I think, therefore, that you must be prepared to make an offer for the North^d collieries concurrently with treating for the Durham collieries, and here there will be some difficulty. I do not think it would do either for the Partnership to sell or the Marley Hill Co. to purchase them at this time... With the London concern, and considering the demand in the District to be supplied with coals by the Marley Hill Co.,

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- (1) Norwood was presumably purchased by this date; the Whickham Manor Royalty adjoined it.
 - (2) Springwell and Mount Moor Collieries, so called because the main seam worked was the Bensham seam (gas coal).
 - (3) Northumberland.

there ought to be a demand for all the Wharncliffe coals worked at Killingworth (1), and connected with our Coking establishment abroad there ought to be a demand for Seaton Burn. Besides, we have already grappled with Marley Hill too extensively to look upon that concern as other than a leviathan; it can only now be successful on a large scale, and the two collieries, or rather the coal from the two collieries of Seaton Burn and Killingworth, will not so materially increase the risk as may at first sight appear." (2)

So matters stood for some weeks, and then one of the Trustees of the late Lord Wharncliffe's estate suggested that John Bowes & Partners should buy the late Earl's share, becoming possessed of the collieries by that means. Wood opposed this on the grounds that the Partners could not afford at that time to take a share in Lord Ravensworth & Partners' debt of £110,000, and Palmer too was against the proposal, so that nothing came of it.

However, it was evident that if Palmer wanted the Springwell Railway and Springwell Colliery he would have to take Seaton Burn and Killingworth also, and in view of this the Partners offered to buy Springwell and Mount Moor Collieries and take a short-term lease of Seaton Burn and Killingworth, and this was readily accepted by the older firm. The price for Springwell has not survived; the lease of the Northumberland collieries was to continue until the end of 1852, when it could either be terminated or extended. Palmer was fairly satisfied with this, as it seemed at the time that Seaton Burn

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- (1) "Wharncliffe" was the sales name given to household coal from Killingworth.
 - (2) Strathmore MSS, Box 2, Durham County Record Office: letter from Wood to Palmer, 3rd September 1849 (passed on by Palmer to Bowes).

was about to be sold, and so he would be relieved of its burden, though this proved a false hope. In February 1850 the Partners took possession of the collieries.

This agreement had two important results. To John Bowes & Partners it meant their entry into the gas and household coal trades on a far larger scale than hitherto. It also gave them holdings in Northumberland, in addition to bringing a step nearer Palmer's hope of an independent outlet for his Durham coal. On the other hand, it was not the end of the road for Lord Ravensworth & Partners, which continued, as far as is known, until Bowes' death in 1835 (1). It was never again to work any collieries - Seaton Burn and Killingworth were eventually sold to John Bowes & Partners - but it continued to own the Whickham Manor Royalty and other small properties in Durham.

Meanwhile, in May 1849 the Partners took over full control of the Northumberland & Durham Coal Company, which thus became a subsidiary company of John Bowes & Partners. It continued, however, to handle coal from other firms as well as the Partners' London trade.

However, if all seemed set fair on one front, there was trouble brewing elsewhere. Towards the end of 1849 the miners at Marley Hill demanded an increase in wages. When this was refused, they came out on strike, and were joined, it seems, by some of the men at Crookbank

(1) Latterly Lord Ravensworth and John Bowes were the only members. It was certainly still in existence in 1882, as it is found among Bowes' financial papers of that date (Strathmore MSS, Box 7, Durham County Record Office).

and Burnopfield. Although an official document of the time describes the men's demands as "something so trifling (an increase amounting to only 5/- per day, to be divided among the whole number of men at the colliery) that it was evidently a mere struggle for mastery" (1) it was a very violent strike. The former Marley Hill Viewer, Gray (2), together with others, made a number of inflammatory speeches, and on 3rd January 1850 a group of fifteen men invaded Burnopfield Colliery, stoked up the fire under the boiler of the winding engine and then placed a large amount of gunpowder near it, causing a tremendous explosion and considerable damage. Unable to use their own coal for the coke ovens, the Partners purchased coal from Joicey's Tanfield Collieries, only to find that one of the trains on the Tanfield branch carrying this coal was wrecked when the strikers placed a sleeper across the line, causing the train to crash into a ravine and putting the incline on which it was travelling out of action. In the end similar tactics to those used in the 1844 strike were adopted, and men were brought from Scotland. This effectively broke the strike, though it was not until the third week in February that it was finally over.

(1) "Report of the Commissioners appointed under the provisions of the Act 5 & 6 Vic c 99 to inquire into the operation of that Act and into the state of the population in Mining Districts, 1850." London: H. M. Stationery Office, 1850, p. 48.

(2) Gray had been dismissed in October 1848 and replaced by a Mr. Greenwell.

Despite the fact that the final agreement for the purchase of Tanfield Moor Colliery had not been completed until March 1850 (though the Partners had been in possession since the previous November), as early as May 1850 Hutt was urging Palmer to sell it, regarding it of no use to the firm. Palmer, it seems, was not unwilling to do so, and in September 1850 it was sold to James Joicey for £5,000. Hutt also wished to be rid of Norwood, adding that "N.W. fairly took us in about that business, which has occasioned nothing but vexation" (1), but here nothing was done.

Although the Partners were still in the process of absorbing the collieries acquired during 1849 and 1850 Palmer was already planning a new scheme, this time in an attempt to speed up and expand the Partners' sales in London. Through the Northumberland & Durham Coal Company Palmer promoted a plan to construct a railway from the Blackwall Dock to a junction with the London & North Western Railway at Highbury, the railway to be known as the West India Dock Railway. Construction began either at the end of 1849 or the beginning of 1850. It was planned to carry coal from any of the north-eastern coal companies, though the Partners' coal would be carried at a cheaper rate. Palmer then set out to make long-term agreements with the coal merchants who would be served by the new line, and in August 1850 he was able to report to Bowes:

(1) Strathmore MSS, Box 2, Durham County Record Office: letter from Hutt to Bowes, 26th May 1850.

".....The quantities already guaranteed for 5 years are as annexed @ 1/- p[er] ton dues:

Stations built and quantities agreed for:

Camden Town	40,000
Caledonian Road	35,000
Highbury	52,000
Gas Works	50,000
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	177,000

Stations not built but probable quantities:

Kingsland	25,000
Hackney	30,000
L & N W Ovens	25,000
-do- Railway	10,000
	<hr/>

267,000 tons" (1)

That Palmer was in a position to be able to contract for over a quarter of a million tons per year for five years shows the extent to which the firm had grown since Marley Hill was sunk only ten years previously, and it gave the Company a solid basis for its operations.

But Palmer did not limit his attention to the West India Dock Railway merely to seeing it as a means of conveying his coal quickly to his customers; at the same time he set out to make improvements to the Blackwall Dock. Rapid delivery of coal depended on quick

(1) Strathmore MSS, Box 2, Durham County Record Office: letter from Palmer to Bowes, 5th August 1850.

discharge of the coal from the ships in the Dock, and to expedite this Palmer designed four hydraulically-operated cranes to lift the coal from the holds straight into the waiting waggons.

All went forward - at a slightly higher cost than Palmer had originally anticipated - until on 15th October 1851 he was able to write:

".....Coals were taken this morning up to Hackney and the trade commenced there, but the cranes and the Dock will not be ready before tomorrow morning." (1)

It was, however, not until February 1852 that Matthew Bell, the new Secretary of the Northumberland & Durham Coal Company, was able to report that the line was fully operational. It was worked by five new six-coupled tender locomotives, later increased to six. (2)

Palmer next turned his attention to Kibblesworth Colliery, possession of which would mean he would control the whole of the railway between Kibblesworth and Jarrow. Circumstances had rather changed since Palmer made his last offer in 1846. Southern was now in partnership with Joicey; but Palmer, from being the manager of a firm owning only one colliery, had risen to be the manager of one of the largest firms in the county, and he now controlled the outlet on which Southern was dependent to ship his coal. Palmer first approached

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- (1) Strathmore MSS, Box 2, Durham County Record Office: letter from Palmer to Bowes, 15th October 1851.
 - (2) The statement in Palmer's obituary in the "Durham Chronicle" that he leased the railway would seem to have no basis in fact.

Southern in August 1851, and the latter readily agreed to his terms. Unfortunately, Joicey did not, believing, no doubt, that Palmer would be prepared to pay a higher price to obtain what he so obviously wanted. Nevertheless, negotiations continued and in November 1851 agreement was reached. The terms were very complicated; suffice it to say that the total purchase price was £15,000, much lower than that offered in 1846, of which £4,000 was to be paid by promissory notes spread over a five year period. Thus after waiting six years Palmer had at last succeeded in reaching his objective.

With so many collieries now under the control of the Partners it was thought necessary to appoint Viewers to supervise groups of collieries, and on 27th December 1851 Hutt, Palmer and Wood met at Marley Hill to make the decision. One of Wood's sons, Collingwood Wood, was appointed to Seaton Burn and Killingworth, giving his father great pleasure in view of his past associations with the two collieries; at the Durham collieries

".....Mr. Southern (1) is appointed Viewer of Kibblesworth and Springwell, Mr. Lawes having been called to other duties, as the Moniteur civilly explains dismissal. Greenwell remains at Marley Hill, President or Regent of the Coking Collieries." (2)

Thus began the system of viewers which lasted until at least 1914.

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- (1) The former owner of Kibblesworth.
 - (2) Strathmore MSS, Box 3, Durham County Record Office: letter from Hutt to Bowes, 7th January 1852. The French tone of the letter reflects the coup d'etat of Louis Napoleon in the previous month.

The individual collieries had their own viewers, but these were subject to the Over-Viewer, later termed the Agent, who in turn was responsible to the Partners (or subsequently the Directors). At the time it seemed that Collingwood Wood might not hold office very long, for Killingworth Colliery was making a heavy loss, and both Hutt and Palmer were determined to give notice when the lease ended in December 1852.

The construction of the West India Dock Railway, later also called the North London Railway, had brought the distribution of the Partners' coal in London under Palmer's control and had greatly facilitated its distribution, but it was little use having suitable capacity in London if one could not guarantee a regular and adequate supply to the metropolis. As has been noted above, the great proportion of the coal trade to London from the North-East was carried by small sailing vessels with a capacity of about 300 tons. They were cheap to build (about £1,000 each) and were expected to last about 100 years, but if they did more than twelve or thirteen round trips per year it was exceptional. If the winds were unfavourable they were either unable to leave port or were forced to shelter in Yarmouth Roads, while occasionally whole fleets were destroyed in storms. When this happened a stoppage of production at the collieries was virtually certain, with the inevitable loss of profits and even contracts.

At this period the ship-building industry of the Tyne and Wear was still quite small. The majority of ships built were wooden,

though a few iron vessels had been built on the Tyne, the largest being 1,350 tons, launched in August 1851. No vessel of any kind exceeding 2,000 tons had yet been built at Sunderland.

It was against this background that Palmer, with his brother George, took what proved to be the most important decision of the former's life, when, at the end of 1851, they decided to take over a derelict shipyard at Jarrow and to form a company, Palmer Brothers & Co., to work it. This decision was accompanied by another - that the yard would design and build the first-ever iron screw collier, to be built for John Bowes & Partners at a cost of £10,000. The ship was to carry about 600 tons of coal and to be ballasted with water under a new patent (1). The collier, appropriately named the "John Bowes", was launched on 30th June 1852 in a lavish ceremony at Jarrow at which the Mayors of Newcastle, Gateshead and South Shields were present. On 29th July she left Newcastle for London on her maiden voyage; on 3rd August she was back, having delivered 530 tons of coal in only six days. It was a brilliant master-stroke, revolutionising the sea-borne coal trade almost overnight, for there was no comparison between a ship which could carry 600 tons of coal and make about 40 round trips per year and the old sailing ships. The new ships meant reduced costs and guaranteed a regular service.

The "John Bowes" was the only vessel built specifically for the

(1) Although nowhere directly stated, it would seem certain that this was the first vessel built at the yard.

Partners, for in August 1852 Palmer formed the "General Iron Screw Collier Company" (which numbered Hutt among its Directors), and ships built at the yard from this date were usually built for the "Screw Collier Company" (as it was more generally known) and then chartered out. With Palmer as Managing Director of the company the Partners had first option on using the ships. Even before the "John Bowes" had proved such an outstanding success a second ship, the "William Hutt", had been laid down, a rather larger vessel than her predecessor, and she was launched in November 1852. After this came the "Countess of Strathmore" (lost at sea in July 1853, but subsequently replaced), the "Marley Hill" and other ships. Screw colliers may indeed be said to have really established Palmer as one of the great Victorian entrepreneurs, for they laid the basis of what was to become one of the most famous ship-building yards in the world. Even the immediate success was obvious, for in the first year's trading the Screw Collier Company was able to declare a dividend of 7%.

Unfortunately, the impact which the adoption of screw colliers must have had on the fortunes of John Bowes & Partners can only be partially estimated. The firm did not long own the "John Bowes", for in January 1853 she was sold to the Screw Collier Company (1), but the benefit gained from the new ships was soon appreciated. In January 1853 freight rates for coal from Newcastle to London were 6/9 per ton. There followed a considerable improvement in trade;

(1) The "John Bowes", under a different name and several changes of ownership, lasted until 1934, when she was broken up after going aground on the coast of Spain.

ships became scarce, and in September 1853 no rates were being quoted less than 13/- per ton. The effect of this was catastrophic. Firms either found that they were unable to charter ships, thus rendering them unable to fulfil contracts, or that, having obtained ships, the rates demanded brought a disastrous loss on contracts made when rates were lower. Several colliery owners went bankrupt during the year and many others had a hard time. The Partners, however, were able to weather the storm fairly easily, as the screw colliers not only cut costs but were also chartered under long-term agreements, rendering the firm free to a considerable extent from the high rates. Moreover, the screw collier helped the northern coal-owners to compete on much better terms with other coal-fields whose transport costs were lower, especially important as the growth of the railway system opened up new markets.

In the summer of 1852 the Partners acquired two more collieries, neither of which was working. Both had belonged to the other large joint-stock company in the Durham coal-field, the Northern Coal Mining Company, and both had been won in 1840. The first was Andrews House, which lay about half a mile south-west of Marley Hill, and had about 30 coke ovens, and the other was Greencroft Colliery, situated on the southern part of the same royalty as Pontop Colliery. The Coal Company was always financially unstable, and after most of its £500,000 capital had been lost it was placed under a winding-up order. Andrews House had been abandoned in November 1848, and Greencroft seems to have suffered a similar fate about the same time:

its equipment was auctioned on 18th November 1850. Andrews House was re-opened by the Partners in December 1852, though it would appear that the ovens there were not rehabilitated. There is no evidence that Greencroft was ever brought back into production, though it is listed by Fordyce (1) as owned by the Partners in 1860; presumably its coal was worked from Pontop.

The figures for the Partners' vend of coal and coke in 1852 are available (2), and a comparison with those of ten years earlier is quite revealing:

	<u>1842</u>	<u>1852</u>
Coal (in tons)	45,140	697,244
Coke (in tons)	4,224	116,713

These figures on their own are sufficiently striking, but they become more so when it is realised that the total figure for coal raised in Northumberland & Durham in 1852 was approximately 15,000,000 tons, which means that the Partners' share of the market was approximately 4.6%. The effect of Palmer's work could not be more clearly shown.

The figures for 1852 are also quite interesting when broken down into individual collieries. The full list is:

(1) FORDYCE, W. "History of Coal & Iron." London: Sampson Low & Son, 1860, p.83.

(2) In Strathmore MSS, Box 3, Durham County Record Office.

<u>Colliery.</u>	<u>Tons.</u>	
Marley Hill	192,870	
Crookbank	52,227	
Burnopfield	78,202	
Norwood	10,971	
Medomsley	6,516	
Pontop	46,257	
Andrews House	1,500	
	<hr/>	
Total for Coking Collieries:	388,543	
Killingworth	84,251	
Seaton Burn	75,220	
Springwell	80,038	
Kibblesworth	69,192	
	<hr/>	
Total for Partnership Collieries and Kibblesworth	308,701	697,244 tons.

These figures should, however, be treated with some reservations. Of the coking collieries, Medomsley was given up in the spring of 1852 when Pontop came into production; neither Crookbank nor Norwood were raising coal during the later months of the year as they were stopped for repairs and sinking, while Andrews House did not commence production until the week ending 13th December; so that, excluding Medomsley, the coking collieries would have produced more if all of them had been in operation for the whole year. Similarly, the figures for the Partnership Collieries (as those obtained from Lord Ravensworth & Partners were generally termed at this time) would have

been slightly higher if Seaton Burn had not been stopped for repairs during the latter half of December.

When one comes to look at the collieries in more detail, other interesting facts emerge. Of Marley Hill's huge output, approximately two-thirds went to the ovens at Marley Hill and Gateshead, and a large proportion of the remainder was sent to London for the Blackwall Ovens, to Grimsby for a new set of ovens (about which very little is known) lit in June 1852 or to Edinburgh to be handled by the Partners' office there; very little of the colliery's produce was sold on the open market. The position is even more marked at Pontop, where in the last six weeks of 1852 only two waggons (excluding those sent for colliery consumption) were not sent to the Pontop Ovens out of 2,996 "sold". Thus private customers had to purchase from Burnopfield, where only about 40 waggons per week went to the ovens recently erected there, or from Crookbank, where coal was vended by taking it from the heap (1) in the latter half of the year. Some of this coal was sent far afield - in the last two months alone there is record of shipments to Nantes and Genoa.

In turning to the Partnership Collieries, and to Kibblesworth, which is included with them on the vend sheets, the picture is rather different. If the last six weeks of the year are a true guide, about

(1) Every colliery at this period maintained a heap of spare coal, and coal which proved surplus to the needs of the week was turned over the heap, to be used either when the pit was not working or the demand exceeded supply.

half of Killingworth's coal was sold locally and the rest sent to London, where again the Northumberland & Durham Coal Company features prominently. At the other three collieries the amount disposed of by ship is far greater than the rest of the sales put together. The Palmers' ship-building yard took a sizeable proportion of Seaton Burn's output in the latter half of the year, while at Springwell and Kibblesworth most of the output went to gas companies, notably the London Gas Company. At Springwell in the last six weeks of the year it is noticeable that the amount raised was rarely sufficient to meet the demands of contracts and colliery consumption, and that both here and at Kibblesworth it was necessary to resort to the heap in most weeks. Overall it would be imprudent to draw too many general conclusions from a rather small sample, but an increase in production in ten years of more than $15\frac{1}{2}$ times perhaps speaks for itself.

If these figures are striking, those for coke are even more so, for here the increase in ten years was 29 times. The figures for the individual sets of ovens are:

	<u>Tons.</u>	<u>cwts.</u>
Marley Hill	61,823	- 18
South Shore (1)	11,820	- 5
Railway	4,825	- 11
Burnopfield	1,964	- 15
Crookbank	2,757	- 7
Pontop	33,520	- 17
	<hr/>	
	116,712	- 13

(1) These were formerly the "Gateshead" Ovens.

Again these figures do not represent either the Partners' total production in 1852 - for the amount produced at the Blackwall, Lowestoft, Grimsby and the ovens abroad is not included - nor the maximum capacity of the ovens in Durham, as in the latter half of the year the Crookbank Ovens were inoperative, while the Burnopfield Ovens worked only intermittently. Palmer's policy of building ovens to serve each colliery, rather than bringing all the coking coal to Marley Hill, should be noted. No date survives for the construction of the ovens at Crookbank and Burnopfield, though they probably date from 1850 or 1851. Although 1852 is perhaps not a completely representative year, the importance to the Partners of coke manufacture is evident. The profit from it was steadily increasing; Hutt reported that the profit from the Coking Company in November 1852 was £830, "the best we have ever had" (1). Unfortunately, the total profits for this year, whether from the collieries or the ovens, do not survive.

Thus at the end of 1852 the Partners had some reason to feel at least partially satisfied with the way things were going. They were producing an important proportion of the coal-field's output of both coal and coke; they controlled to a large extent the shipments of their coal from the Tyne, and through the Northumberland & Durham Coal Company and the West India Dock Railway they had excellent

(1) Strathmore MSS, Box 3, Durham County Record Office: letter from Hutt to Bowes, 25th January 1853.

distributive facilities in London. There remained only the vexed problem of the conveyance of coal and coke from the pits to the Tyne. In Northumberland this was no problem, as both Killingworth and Seaton Burn were served by private railways which had staithes on the Tyne; but in Durham the Partners still had to send their coking coal and coke down the congested Tanfield branch of the York, Newcastle & Berwick Railway, and Palmer well knew that the solution lay in his own hands if his fellow-Partners would agree to it.

Things began to move only a few months after Kibblesworth Colliery had passed into the Partners' hands, giving them full control of the railway between Kibblesworth and Jarrow, thus completely altering the position as it had been at the time of Palmer's earlier plan of 1847. In the middle of February 1852 he presented what even Hutt called an ultimatum to the railway company. Unless their dues were reduced from $4/7\frac{1}{2}d$ per ton to $3/6d$, with a similar reduction on the Pontop & Shields section for coals led from Medomsley and subsequently from Pontop, he would construct the link between Marley Hill and Kibblesworth, and send as much of the Partners' coal and coke as he could down the line for shipment at Jarrow. In order to give added point to this, Greenwell was ordered to survey a possible line.

Unfortunately, the railway company saw that this was little more than bluff, believing that the Partners' commitments, especially in connection with Killingworth, would not leave them sufficient capital to build and equip the proposed railway. Indeed, Palmer

admitted that one of the reasons why he wished to give up Killingworth was to have money free to build the railway. He appears to have realised that his bluff was called, for he next offered to reduce the price of coke to the railway company if the latter would reduce the dues as above and also pay the way-leave charged by Lord Ravensworth (1). This too produced no result.

On top of this blow came another: in any case the link between Marley Hill and Kibblesworth could not be constructed as Lord Ravensworth was not willing to grant the Partners the necessary way-leave for the line over his land on Blackburn Fell, and so Palmer's threat was hollow too. In the face of this he was compelled to climb down, and in December 1852 he wrote:

".....I am sorry to say we are getting on very badly at the Coking Coll[ier]ies. The Railway people appear to treat us as if we were fast and could not help ourselves. We must make up our minds to suffer while Lord Ravensworth lives..." (2)

But Palmer was not to be beaten as easily as that, and in January 1853 he suggested a line from Marley Hill to Derwenthaugh (at Swalwell, west of Gateshead), where coal could be shipped at the staithes used by Lord Bute's colliery at Garesfield. The line would have followed the course of the famous Main Way, one of the

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- (1) The Tanfield branch was constructed under way-leave agreements, mostly made with Lord Ravensworth.
 - (2) Strathmore MSS, Box 3, Durham County Record Office: letter from Palmer to Bowes, 11th December 1852.

best-known of the eighteenth century waggonways on Tyneside. He appears to have been serious about this, though it had none of the advantages of linking Marley Hill to Kibblesworth, it would have been a longer line and probably more expensive, while in any case Lord Ravensworth was an old man and his son was in favour of granting the Blackburn Fell way-leave. Bowes approved of this new idea in principle, but felt it would be cheaper to connect it to the railway from Garesfield Colliery rather than make an independent line to the staithes. But Hutt was opposed to spending the capital needed for it, and at the end of January Palmer was compelled to drop the idea.

Then came the news that was least expected - that Liddell had managed to persuade his father to grant the Blackburn Fell way-leave. There was no hesitation now; the necessary money was raised from the Northumberland & Durham District Bank, and in July 1853 work began. The link was to be $2\frac{1}{4}$ miles long, and involved a self-acting incline from the top of the 550 ft moor known as Birk Heads down to Kibblesworth, giving six consecutive rope-worked inclines between Birk Heads and Springwell Bank Foot, four worked by stationary engine and two by gravity, with a total distance of just over six miles (1). The branch from Andrews House Colliery to the Tanfield branch had to be altered to connect with the new line, the Tanfield branch itself being crossed on the level at right-angles. In

(1) All of these inclines are still in operation, and the working of them has changed only little since 1854.

addition, in order to cope with the increase in traffic which would result when the link was opened, the incline from the bottom of the Team Valley up to the closed Mount Moor Colliery, known as the Black Fell Incline, was to be reconstructed as a double line and a more powerful stationary engine installed to work it. The old Springwell Staithes at Jarrow were to be abandoned and the line diverted to new staithes which were to be built just to the west of Palmer Brothers' ship-building yard, which was to be connected to the line by a short branch, and the line which carried the passenger trains from Springwell Station to Ellison Street in Jarrow (1) also had to be altered. Finally, extra waggon and new locomotives would also be needed, though for the present Palmer determined to try to manage with what he already had in order to keep down the cost.

A good deal of the work of construction was done by direct labour, and here the Partners had difficulty both in finding men and then in obtaining lodgings for them when found. Moreover, the construction of the line was found to be

".....a very tough job: instead of a very easy line as Greenwell represented it the line presents an unbroken continuation of cutting and embankment from one end to the other...." (2)

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- (1) This had been started about 1843, probably by the Brandling Junction Railway using horses. When the Partners took over is not recorded.
- (2) Strathmore MSS, Box 3, Durham County Record Office: letter from Hutt to Bowes, 25th April 1854.

Hardly had work begun on this when the Partners decided to sink a new colliery at Dipton, about $1\frac{1}{2}$ miles south-west of Burnopfield, in the northern part of the same royalty on which Pontop was sunk. At the same time, therefore, the railway was extended from Burnopfield to Dipton, and this too involved both cutting and embankment.

Although the section between Marley Hill and Kibblesworth was only just over two miles long it took fourteen months to build, but at last, on 20th September 1854 it was opened. But Palmer's troubles were far from over. Owing to a severe shortage of waggons it was only possible at first to run coal from Andrews House over the new line, and then the staithes at Jarrow were found to be inadequate to deal with all the expected traffic, and another staith had to be erected. Moreover, the section between Burnopfield and Dipton remained closed as Dipton Delight Colliery, as the new pit was called, had not yet been brought into production. This at length occurred in April 1855, and one senses a feeling of relief when Hutt wrote to Bowes on 15th April that "all our coals are now going down our own line." (1)

Hutt estimated that the loss to the York, Newcastle & Berwick Railway through the construction of the new line would be about £20,000 per year. Since Palmer had originally calculated that the line would reduce transport costs by about one-third, it would be

(1) Strathmore MSS, Box 3, Durham County Record Office: letter from Hutt to Bowes, 15th April 1855.

reasonable to assume that the line saved the Partners about £6,000 per year in dues. But it did far more than this. It meant that they were no longer dependent on a capricious railway company for an adequate supply of waggons, which might or might not be available when required. It meant too, that the Partners' coal and coke could be shipped much more quickly than before, for having their own railway and staithes meant that work could go on through the night if necessary to ship urgently-needed coal at Jarrow. Furthermore, the loop into Palmer Brothers' yard at Jarrow was to strengthen the ties between the two firms. Palmer himself considered the line, now fifteen miles long, to be of the greatest importance, and this is well shown in November 1853 when he gave it the imposing title of "Pontop & Jarrow Railway", a name which it was to retain for nearly eighty years (1). When Mount Moor Colliery was re-opened in June 1854 and Dipton began production in April 1855 the railway was serving eight collieries.

The largest problem still requiring Palmer's attention during this period was the condition of Killingworth. Changes in the management of the colliery had reduced the loss it had been incurring, and the Partners appear to have turned the lease of both it and Seaton Burn into a straightforward purchase when the lease expired in December 1852. But the position was still serious, and Hutt

(1) The railway was re-named the "Bowes Railway" in 1932, the title it still holds.

raised the matter in a letter to Bowes in December 1853:

".....First of all there is the question of Killingworth Colliery. The time is come when we must take some decision respecting it. Three courses, as Peel used to say, are open to us. We may give it up, but as we have lost by it £18,000 and as it is now paying well, with the prospect of continuing to do so, one would adopt that course with great reluctance. 2ndly, we may retain it, but to do so we must immediately enter upon an expenditure for rendering more coal available which cannot be less than £6,000.

The third course is to purchase Gosforth Colliery, which with the royalty, is offered us at £34,000, or at £18,000 without the royalty. If this plan be pursued the expenditure on Killingworth would be unnecessary, and the two collieries, as you are aware, can be worked advantageously together.

Nicholas Wood says that Gosforth Colliery is now making £10,000 a year, and besides paying £2,500 certain rent has always made £2,000 a year. He is very earnest about the purchase - so is Palmer.... I should perhaps add that at the moment Killingworth coals, which sold last year at 6/6 per ton, are selling at 10/-." (1)

Gosforth Colliery had been won in 1829, and up to 1852 it had been owned by Rev. R. H. Brandling, since when it had been administered by the Trustees of his estate. Bowes was in favour of the purchase, and Palmer thought it should be possible to pay for it out of the colliery's annual profit. But the negotiations opened in January 1854 faded into obscurity, though not apparently from any lack of energy on the Partners' part. Nevertheless, Hutt had commented earlier that the colliery "must, by force of circumstances, fall eventually into our hands" (2), so that the Partners were probably

(1) Strathmore MSS, Box 3, Durham County Record Office: letter from Hutt to Bowes, 18th December 1853.

(2) *ibid.*, letter from Hutt to Bowes, 7th January 1852.

not dismayed by their initial failure.

One of the royalties owned by Lord Ravensworth & Partners was the large Shipcote royalty in Gateshead, and in 1854 the Partners opened out a landsale colliery (1) on it. Neither the ownership of the royalty at this time, nor whether this was a new winning or the re-opening of old workings, is clear. The colliery was situated at the top of the High Street in Gateshead, and was always a small concern.

The Partners' trading position during the period between 1846 and 1855 appears to have been good. The years between 1846 and 1850 were a period of generally steady prices, the Partners' coal averaging 5/6d per ton at South Shields. Similarly, the price of coke is reported as 9/- at the ovens in both 1846 and 1848, though in January 1849 Pontop coke was only 8/-. Over the same period the Partners' profits show a steady rise. In the first half of 1846, when they owned only Marley Hill Colliery and three sets of ovens, the average profit per month on the colliery was £225 and on the coking business £333, while there was a small profit from the establishment at Blackwall; this would give a total profit for 1846 of about £7,700. In the second half of 1850 the figures were:

(1) The term given to a colliery which sells all its produce locally.

	£.	s.	d.
John Bowes & Partners	4187	11	4
Partnership Collieries	2904	18	5
Marley Hill Coking Company	813	10	7
Northumberland & Durham Coal Company	2784	12	3
	<hr/>		
Total:	£10690	12	3

It is difficult to compare these figures with 1846 in view of the increase in the number of collieries owned, but the Coking Company's figure shows a substantial fall for no apparent reason. The total profit for 1850 appears to have been about £22,000.

The period between 1851 and 1855 shows a quite striking advance. In 1852 and the first part of 1853 the profit was still quite small, while there was a loss on operations in London, apparently because the West India Dock Railway was not working to full capacity. But in 1853 the price of Marley Hill Coke reached 13/- per ton at the ovens, while early in 1854 Marley Hill coal was selling at 8/9d per ton at the staithes, which Hutt describes as 75% higher than the 1853 price. In June 1854 gas coals were selling at 7/9d and coking coals at 6/9d. The effect of this on profits was remarkable. The profit in the half year ending December 1853 had been:

	£.
John Bowes & Partners	5435
Partnership Collieries	3434
Marley Hill Coking Co.	4191
	<hr/>
	£13,080

But the profit for the month of March 1854 alone was £6,409, composed of:

	£.	s.	d.
John Bowes & Partners	2197	- 6	- 0
Partnership Collieries	2245	- 7	- 3
Marley Hill Coking Co.	1937	- 7	- 7
West India Dock Railway	346	- 18	- 6
	<hr/>		
Total:	£6726	- 19	- 4
Loss on Blackwall	317	- 8	- 7
	<hr/>		
Profit for month	£6409	- 10	- 9

As in the previous year there is a considerable increase in the profit from coke, and also a sizeable income from the collieries. The rate of profit continued at this level for some time; the total for August and September combined was £12,657, and it seemed that the total for the year would be about £70,000, or about £6,000 per month. Hutt's surprise may be imagined when it transpired that the total profit was only £47,000. No explanation was forthcoming for this, and the figure is surprising, both in view of the previous figures and of those for January 1855, which reveal a profit of £6,025 - 8 - 5d. The profit for the first half-year of 1855 was:

	£.
John Bowes & Partners (1)	13,584
Marley Hill Coking Co.	13,805
North London Railway	1,523
	<hr/>
Total	£28,912

It will be noted that the profit from coking now exceeds that from the collieries, but overall the level of profit is beginning to show a decline. But despite these profits Palmer did not declare a dividend for the Partners, all the money being ploughed back into the business.

By 1855 the great period of the firm's expansion was over. The Partners now owned fourteen collieries, twelve of them in County Durham (although Greencroft was closed) and two in Northumberland. Excluding Greencroft, the Partners' private railways carried the coal and coke from all but three of their collieries (Pontop, Norwood and Shipcote), while they controlled a large part of the means of delivery to a customer. This expansion, achieved in such a short space of time - only just over six years separate the purchase of Crookbank and the opening of Dipton - is unmatched in the history of the coal-field and the industry in general. It was possible only through the existence of three favourable factors. The first of these was that, as has been seen, the period between 1847 and 1855

(1) The Partnership collieries are now included with the rest.

was one of general prosperity in the coal industry producing in an expanding market, due to the increasing demand for coke from railways and later iron-works. As a result profits could be ploughed back for expansion and loans obtained from banks to finance new purchases. Secondly, the Partners were fortunate that so many of their neighbours went bankrupt after trying to take advantage of the boom between 1836 and 1843, thus enabling the firm to build up a compact coking unit, on which their prosperity was based. They were no less fortunate that the older firm of Lord Ravensworth & Partners, with whom there were kindred ties, was in decline and wished to withdraw from the industry. Finally, they had in Palmer a man who was eager to take advantage of the opportunities presented to him and had the energy and ability to make the best of them. The combination of these three factors and the profit they gained from them placed the Partners among the most powerful coal-owners in the industry. But the cost was a debt of at least £170,000 - and the price had still to be paid.

CHAPTER 3.

THE YEARS OF CONSOLIDATION : 1856 - 1865.

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In 1848, possibly to advance his suit with a French actress of his acquaintance, the Contessa di Montalbo, Bowes had bought the lease of the Théâtre des Variétés in Paris. The price was considerable - apparently about one million francs - and financially it proved Bowes' most disastrous venture. Under the terms of the lease Bowes had to act as Director, and he not only lost money here but was also fleeced by others concerned with the theatre. In August 1854 he had married the Countess, but was unable - and in part unwilling - to get rid of the Théâtre; and to meet its very heavy costs he drew heavily on the funds of John Bowes & Partners and the Northumberland & Durham Coal Company. Usually he gave a short-term promissary note in return for sums up to £1,000, the terms being normally for periods of up to six months. This arrangement seems to have been a private one between Bowes and Palmer, made with Hutt's knowledge but not with Wood's. Such a policy was, to say the least, ill-advised, especially at a time when Palmer was greatly increasing the Partners' debts in his efforts to expand the Company, for it left the Companies concerned chronically short of money. The accounts could perhaps bear this burden when times were good; but the seven fat years were past, now to be succeeded by the seven lean years. In the former the profits had been ploughed back in expanding the Company; but the expansion had been so fast that a huge debt had been run up, and now that the seven lean years were about

to begin, the Company had no means of meeting payments on Bills other than out of profits, for there were no reserves. With Bowes in serious financial difficulties, and Hutt too in some financial embarrassment, the Company could scarcely look forward to the future with confidence.

At 31st December 1854 the Partners' total debt was £179,991 - 13s - 9d, a total which does not include the Partners' own money loaned to the Company, which, if it were included, would certainly raise the sum well over the £200,000 mark. Of that sum, nearly £39,000 was owed to Lord Ravensworth & Partners for the purchase of Springwell Colliery, and nearly £20,000 more was owed to the older Partnership for other things. With the debt so big Palmer made no move to pay off even part of this, relying on Lord Ravensworth and Bowes not to press for the money. All sorts of other payments were outstanding, both for collieries and for stock, and with only a small number of payments being made considerable interest on the debts was also accruing.

Nevertheless, at first Palmer did not regard matters as too serious. During 1855 the sinking was begun of a new colliery at Byer Moor on the north side of the Pontop & Jarrow Railway opposite Crookbank Colliery, while in February 1856 a consortium of northern coal-owners agreed to pay £5,000 per year for certain rights over the West India Dock Railway, which relieved the Partners, through the Northumberland & Durham Coal Company, of the constant debt on that concern. But the signs of the coming storm were already there; in

the same month Hutt reported that the vend was falling off and that the national money market was becoming tight. As yet Palmer was not fully aware of Bowes' difficulties, and there are many letters in a vein similar to this one of 28th March 1856:

".....Mr. Bell (1) telegraphed me yesterday for £1,000 and writes today that you have short-remitted that amount. I cannot send it from here and hope that he may be able to borrow it. I assure you such occurrences keep me in constant misery.... these Bills have much affected our credit and will in the end stop us unless they can be got out of the way." (2)

So serious had the position become that it looked as if the Partnership was going to break up. In March 1856 Hutt offered to sell his share in the Partnership to Palmer and leave Gibside so that Bowes could sell it, but both offers were declined. Two months later Bowes himself wanted to sell his share in a desperate attempt to realise some of his assets. Palmer's reply was brief:

".....I really cannot see how that can be done. It would take a very long time to arrive at a valuation and I don't know of anybody likely to take such a business in hand. I think you will have to abandon that idea." (3)

The fact was that the Partnership was now so large that even in good times there were few people who could have afforded to purchase Bowes' share, and in any case such a sale would only have been a temporary palliative. There was only one solution - to sell the

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- (1) The Secretary of the Northumberland & Durham Coal Company.
 - (2) Strathmore MSS, Box 3, Durham County Record Office: letter from Palmer to Bowes, 28th March 1856.
 - (3) *ibid.*, letter from Palmer to Bowes, 12th May 1856.

Théâtre des Variétés and limit his private expenditure, but Bowes seems to have wished to avoid this if he could.

Meanwhile the financial depression grew worse, and some small firms began to fail. One such was John Carr & Co. of Wallsend Ironworks, whom the Partners had supplied with coal and coke over a considerable period. When they went bankrupt in October 1856, the Partners, through Palmer's foresight, were the only secured creditors and so took possession of the works, making them iron manufacturers in addition to their other activities. Hutt wrote:

".....There are two furnaces (1), each turning out from 120 - 140 tons of iron per week. The iron costs in manufacture 58/- or 59/- and it sells for 70/- per ton. The furnaces take off the Killingworth small coal and a good deal of coke. In fact, if we had no debts these works would be a desirable acquisition in these times, but we must sell as soon as we can. I am assured we shall lose nothing by Carr's failure, in fact, from the prices above a profit will be made." (2)

The Partners did not retain the works long, for within a few months they were sold to Palmer Brothers & Co. (3). For Palmer had taken another very important decision - that the iron which his shipyard needed should be supplied from his own ironworks, the iron ore coming from his estate in Cleveland. To control an ironworks

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- (1) Erected in 1854 - 1855.
 - (2) Strathmore MSS, Box 3, Durham County Record Office: letter from Hutt to Bowes, 22nd October 1856.
 - (3) The furnaces were put out of blast in 1857, and only worked again between 1859 and 1865.

at Jarrow he formed a new concern called The "Jarrow Iron Company". The building of two furnaces at Jarrow began in 1856, and two more were begun in 1857, but the first of these was not put into blast until July 1858. This was a turning point in the history of John Bowes, Esq., & Partners. Hitherto their prosperity had been based on the sale of coke to railways, but about 1857 modifications in the design of locomotive fireboxes enabled coal to be used, and thereafter railways used less and less coke, until by about 1870 this trade was virtually extinct. At the same time, the 1850's also saw the rapid growth of the iron industry in south Durham, Teeside and Tyneside, and this provided a new market for coke. To supply their needs the larger iron companies, such as Bolckow & Vaughan and what was later to be the Consett Iron Company, began to acquire their own collieries. Palmer, however, was in a different position, in that he was Managing Director of a ship-yard which he wanted to supply with iron. For him to obtain a supply of coking coal and coke was easy, for the loop from the Pontop & Jarrow Railway into his yard meant that an ironworks could be supplied directly from Marley Hill and the other coking collieries of the Partners. This new market greatly aided the Partners in times of changing markets, but it also had the disadvantage that they were much more at the mercy of the trade cycles in the iron industry, so that when there was a depression in the iron trade they would feel the effect almost immediately.

But all this was in the future; a much greater financial crisis

was approaching. In March 1857 Bowes' financial embarrassments became so serious that it seems that he was near bankruptcy. As a result of his inability to meet demands upon him, the Partnership was severely embarrassed. By the third week in May Palmer, who had now become Bowes' financial adviser, had lent £9,000 to the firm. Long-standing Bills continued to fall due, and with virtually no money to pay them, Palmer was compelled to keep asking for them to be renewed. The result was that some creditors received no money at all; no step was made between 1854 and 1857 to pay off any of the debt owing for the purchase of Springwell Colliery, and several times Lord Ravensworth, supported by Wood, whose loyalty to the older firm was always much stronger than to the Marley Hill partners, remonstrated strongly with Palmer and Bowes, though somehow these crises were always surmounted.

The Partners' position was not helped by a dispute which broke out between them and the former partners of the Northumberland & Durham Coal Company, of whom Wood was one, whom the Partners had displaced when they took over full control in 1849. The nature of the dispute is both complicated and obscure, but it was resolved by Wood in May 1857 by an arrangement under which the Partners were to take upon themselves the debts of the old company - some £52,000 - and then sue the Victoria Dock Company, who had possession of part of the Blackwall premises, concerning their agreement with the new Company in an attempt to recoup most of the £52,000. It seems that the Partners had a strong case against the Dock Company, but Palmer was

strongly critical of Wood's action in committing the Partners to a considerable extension of their Debt at a time when they could least afford it and without previously consulting anyone else; Wood, of course, did very well out of the arrangement. Nevertheless, the arrangement was ratified, and proceedings started against the Dock Company. These were prolonged into a semi-sterile arbitration in which the Dock Company made every attempt to avoid coming to the point, and while this was going on all the Partners had to show was a greatly-enlarged debt. As at this time Bowes himself owed the Partners nearly £10,000 Palmer's position and the future of the Company was exceedingly weak.

In an attempt to convert some of their property into money and so relieve the position a little, Palmer in August 1857 opened negotiations with the London & North Western Railway for the sale of the West India Dock Railway to them. The railway had never fulfilled the hopes placed in it, and Palmer considered that the loss to the Partners of their control of the distribution of their coal in North London was more than offset by the elimination of the railway's annual loss and the money which the sale would bring. Unfortunately, to do this meant that the 1856 agreement with the northern coal-owners would have to be cancelled, and the largest of them was the Hetton Coal Company, of which Wood was a prominent Partner. It was just at this time that Wood discovered that Palmer had been making the short-term loans to Bowes referred to above, and not only was he displeased, but he demanded money on his own account in addition to

the £500 per annum which he received as the Partners' Superintendent Viewer. It was also at this time that Bowes made one of his regular attempts to let the large Hylton Royalty which he owned on the south bank of the River Wear near Sunderland. This task had been assigned to Wood as early as 1837; Palmer (on behalf of the Partners) and the Harton Coal Company (of which, once again, Wood was a prominent Partner) were both interested as their royalties adjoined Hylton, but nothing had been done. Thus in an attempt to get things moving and so have the chance of receiving some rent, Bowes asked Palmer to see what he could do to bring the matter to a conclusion. This brought a strong reaction from Wood:

".....Wood said that the Harton Compy would not take the royalty and we could not. I believe he has been trifling all the time and that he never designed to take it or to let any other party do so. I begin to form a very indifferent opinion of N. W." (1)

Within a fortnight of the above Palmer and Wood had a more serious quarrel, at the end of which Palmer refused to have any more dealings with Wood and asked him to state on what terms he would sell his share in the Partnership. The crisis came at the beginning of October 1857. Palmer and Wood, with Hutt as mediator, met at the Newcastle office on 2nd October, and there followed another very stormy meeting, which was renewed when Palmer and Wood met on 3rd.

(1) Strathmore MSS, Box 3, Durham County Record Office: letter from Hutt to Bowes, 11th September 1857.

All kinds of violent accusations were made, not always in delicate language. Wood claimed he had been mis-represented, said he would resign his situation with regard to the Partnership and never enter the office again: nor would he sign any Bills - the others could see how they would get on without him. For a month it seemed quite possible that the Partnership would break up, for either personal or financial reasons. Then the worst came.

During 1857 financial confidence throughout the country had continued to weaken and the number of company failures increased. There followed a run on the banks, with the result that a number failed in Scotland. Palmer feared the worst - and he was correct: in the middle of November 1857 the great Northumberland & Durham District Bank announced that it was suspending payment. Totals running into millions of pounds were both owed by the Bank and owed to it, and hundreds of people in north-east England were ruined overnight. There were scenes of pitiful distress in all of the large towns.

At the outset the Partners were lucky. When the Bank's failure came Palmer was in London negotiating the sale of the West India Dock Railway, and he was able immediately to make arrangements with the Bank of England and also to obtain part of the sale money for the railway. But at the end of the month a rumour got about that the Partners owed the District Bank £200,000, causing considerable damage to their credit, despite the fact that Palmer announced that it was blatantly untrue, as indeed it was.

At this crucial moment Wood was removed from the scene because of a burst blood vessel from which it was feared he would not recover, and shortly afterwards he found himself owing £20,000 when another company in which he was involved went bankrupt. The position was indeed critical. Excluding the Bills given for colliery purchases, the outstanding Bills amounted to £119,851. Palmer calculated on receiving another £30,000 for the West India Dock Railway, £15,000 he would advance from Palmer Brothers & Co. on the security of the Marley Hill lease and certain Bills to the extent of £30,000 could be "arranged"; but that still left £45,000 to meet, and this without the Bills due for colliery purchase. Hutt thought the position hopeless, and Bowes began to make preparations to sell all his French property. But in a time of crisis Palmer was at his best. Hutt described him as "so cool and collected" (1), and Bowes, on writing to Palmer for advice, received the following reply:

".....You may be sure that although I am bound to look at matters as a man of business, yet I assure you nothing shall be done that I can possibly avoid as a private friend and one sincerely attached to you and wishful at all times to promote your comfort and happiness and therefore to consider most anxiously the wishes, happiness and health of Mrs. Bowes... You ask me what course I propose to take - it is simply to struggle against every difficulty, to leave no effort undone. I feel equal to the task, and with a firm determination I think we shall get through without dishonouring our Bills." (2)

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- (1) Strathmore MSS, Box 3, Durham County Record Office: letter from Hutt to Bowes, 27th November 1857.
- (2) *ibid.*, letter from Palmer to Bowes, 1st December 1857.

Somehow Palmer managed to raise a little money and struggle through January, but towards the end of the month the position worsened and Palmer began to despair. He had, however, the help of Wood (now recovered from his illness), who had put aside all the disagreements to assist in the fight for survival. But in the third week of January - pay week - Wood wrote:

".....I fear there is no disguising matters: unless we can get some money at Marley Hill we shall be in the Gazette. Palmer and I are doing all we can...." (1)

The result of this was that Bowes came across from France for the first-recorded formal meeting of the Partners, a meeting - on 28th January 1858 - at which Lord Ravensworth (2) was also present. The Partners decided to attempt to pay the Bills by raising money on Bonds - in other words, to convert the greater part of the debt into a number of debts to individuals who would not immediately require payment. Lord Ravensworth himself provided some money, and so did the Earl of Durham. But these sums seemed only like straws offered to a drowning man, and the crisis was not long in coming. On 11th February Palmer wrote:

".....I am quite sure unless I get this sum (£5,000) from you or Mr. Hutt by Thursday next (15th) I shall not be able to pay wages and the concern must stop.

(1) Strathmore MSS, Box 3, Durham County Record Office: letter from Wood to Bowes, 24th January 1858.

(2) H.T. Liddell had succeeded his father as 2nd Baron Ravensworth in 1855.

It is useless to contend against all the difficulties." (1)

But somehow the money was found, and slowly Palmer began to bring things round. He was helped a little in April by the award of the arbitrator in the case against the Victoria Dock Company, who awarded the Northumberland & Durham Coal Company £50,500 damages - but only a little, as the Dock Company found every conceivable excuse for not paying. Fortunately, the Partners were still making money. The profits for the half-year to the end of June 1858 were £23,111 and the amount charged to capital for new work only £3,080, compared with £22,759 and £7,257 in the equivalent period in 1857, though of course all this money had gone in reducing the debt. But just as it seemed that the Partners would weather the storm a further, more serious blow fell. One of the Northumberland & Durham District Bank's larger creditors was Lord Ravensworth & Partners, who legally still owned Springwell, Killingworth and Seaton Burn Collieries as John Bowes & Partners had not completed the payments for them. In September 1858 the Receiver for the Bank demanded that Lord Ravensworth & Partners' debt to the Bank be paid; this of course the older partnership was unable to do because of all the money owed to them, and so the Receiver threatened to take possession of the collieries and sell them. This seemed the final blow:

(1) Strathmore MSS, Box 3, Durham County Record Office: letter from Palmer to Bowes, 11th February 1858.

".....Mr. Palmer would inform you the Bank people wish to sell the property. This would, I think, finish the Marly Hill Co as the Bills for the payment of Springwell would be set afloat and would have to be paid, and the Marly Hill Co also owe the Partnership £16,000 and upwards." (1)

But yet again the Partners survived. The solicitors of Lord Ravensworth & Partners managed to raise the necessary money and the crisis passed. Moreover, in December 1858 Palmer was successful in making a final settlement with the London & North Western Railway over the sale of the West India Dock Railway, negotiations for which had been held up throughout the year by complicated legal points. For this Palmer obtained £46,017, all of which was paid by 3rd January 1859. He was very pleased, not only because it relieved the Partners of a considerable liability, but also because money was now in hand to meet debts. It was with a great sense of relief that Palmer wrote to Bowes just before Christmas:

".....Most devoutly do I pray that next year may greatly relieve us. I would not have such another as this for all the Collieries, Coke Ovens, Steamers, etc., in the world. But all is well that ends well." (2)

The year 1859 began well. At the end of 1858 total debts (excluding money belonging to the Partners invested in the Company) amounted to £120,921 - 12 - 4d., a reduction of nearly £40,000 in twelve months. A further six weeks completed the process which had

(1) Strathmore MSS, Box 3, Durham County Record Office: letter from Wood to Bowes, 3rd September 1858.

(2) *ibid.*, letter from Palmer to Bowes, 22nd December 1858.

been begun in January 1858; all the Partners' creditors for stock and for all the colliery purchases except those from Lord Ravensworth & Partners, had been paid off (Lord Ravensworth himself was paid £15,000). By 19th February 1859 the debts had been further reduced to £100,000, of which half was owed to Lord Ravensworth & Partners and the rest to various Bond holders, about a dozen in number. By September 1859 the total appears to have fallen to £44,000, presumably because the Victoria Dock Company had at last paid up, and Hutt estimated that though all the profit of the next two years would be needed to meet the payments due on these debts, a dividend might be possible thereafter - for indeed it was very true that nearly twenty years operation in the coal industry had brought the Partners no monetary dividend.

With the pressure now eased a little, Palmer set about trying to alleviate the constant drain which Killingworth imposed on them. The difficulties here have been fully examined earlier and the remedy - to obtain Gosforth Colliery - remained the same. Negotiations were accordingly re-opened with the Trustees of the late Rev. R. Brandling, and £30,000 (to include the royalty) was offered, but declined. But after the colliery had again been offered at a public auction and had again attracted no bidders the Trustees became rather more amenable. Wood re-opened negotiations, with the result that in February 1860 Gosforth Colliery passed into the Partners' hands. The price was £34,000, of which a quarter was to be paid in cash at once. This money had to be borrowed, and this was done

under rather curious terms, for the bank retained all the money paid for the coal sold over 7/- per ton. The profit from the colliery was estimated at between £700 and £800 per month, and as early as July 1860 Hutt was commending its purchase. It did indeed help Killingworth to a better position - at no extra cost, for as the Partners owned the Gosforth royalty there was no out-stroke rent on coals worked from one royalty at the shaft of its neighbour.

A similar problem had also arisen in connection with Crookbank Colliery and the new shaft nearby at Byer Moor, where the sinking begun in 1855 had been stopped because of the financial crisis. Crookbank was, as we have seen, a small colliery, sunk only to the Main Coal seam at 38 fathoms. Byermoor, where sinking had recommenced in 1859, had been sunk to the Busty Bank seam at 68 fathoms, but it was situated on a different royalty from Crookbank, from which it was separated by a dyke, or geological fault. Moreover, at this time it was believed that no further coal seams existed in this area below the Busty Bank. The problem was therefore whether to sink Crookbank to the Busty Bank seam (the Main Coal seam being nearly exhausted) or to close Crookbank and work the coals from that royalty from the Byermoor shaft, paying outstroke for the privilege. A report of January 1860 stated that even if Crookbank were sunk further the pit would have a life of not more than twenty years, while the expenditure of equipping Byermoor to work the coal from both royalties was not a lot greater than the cost of sinking Crookbank. As a

result the decision was made to lay in Crookbank Colliery and work all the coal from Byermoor when that pit should be ready.

Then a very important discovery was made. In sinking the Byermoor shaft further in order to locate the Busty Bank seam on the Crookbank side of the fault, the sinkers came upon a good seam of coal only four fathoms below the Busty Bank seam. At first it seemed that this was part of the Busty seam, but in November 1860 the Partners were assured that it was the Brockwell seam, hitherto unknown in this area, and as a result the whole of their operations in North-West Durham were considerably enhanced. The list of "Borings and Sinkings" compiled by the North of England Institute of Mining and Mechanical Engineers shows, however, that this new seam was in fact the Three-Quarter, and that the Brockwell seam, which was also good coking coal, was found about fourteen fathoms deeper, which must have delighted the Partners even more. Byermoor Colliery seems to have come into production during the winter of 1860-1861, Crookbank Colliery ceasing production at the same time. The Crookbank site was subsequently cleared and new coke ovens built upon it.

During the spring of 1860 the Partners also opened negotiations for Felling Colliery, which lay about three miles east of Gateshead not far from the Tyne shore, where it had its own staithes. This was a gas coal colliery whose history stretched back into the eighteenth century and included a horrifying list of explosions. In the late 1850's Messrs. Carr, Potts & Co. had begun to sink a new shaft here, and at the time that Fordyce was collecting material for his book they

had spent £20,000 without successfully completing the winning. It is, perhaps, not surprising in view of this that they wanted - or possibly were compelled - to sell, for Hutt wrote that "Palmer expects to conclude on his own terms." (1) Why Palmer was interested in obtaining the colliery is not clear, for it was isolated from the rest of the Partners' collieries. Possibly he just regarded it as a potentially valuable acquisition to the Partners' gas coal trade which could be bought for a low price. In August 1860 it seemed that terms had been agreed, for Hutt wrote to Bowes that:

".....Felling Colliery is ours. It was finally sold for £22,000, to be spread over three years." (2),

and two months later he added:

".....the Felling Colliery is at last transferred to us." (3)

But in January 1861 this became:

".....the Felling affair makes no progress, tho' Palmer is still hopeful." (4),

to be followed in February by:

".....It is as well we did not contract to purchase Felling Colliery." (5)

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- (1) Strathmore MSS, Box 3, Durham County Record Office: letter from Hutt to Bowes, 11th June 1860.
 - (2) *ibid.*, letter from Hutt to Bowes, 18th August 1860.
 - (3) *ibid.*, letter from Hutt to Bowes, 14th October 1860.
 - (4) Strathmore MSS, Box 4, Durham County Record Office: letter from Hutt to Bowes, 5th January 1861.
 - (5) *ibid.*, letter from Hutt to Bowes, 24th February 1861.

Exactly what went wrong is not stated, but the fault does not seem to have lain on Palmer's side. But as with Gosforth in 1853, it was not to be the last dealings which the Partners were to have with Felling Colliery.

Although the coal trade began to improve slowly during 1859 and 1860 the Partners did not feel the full benefit, partly because the improvement was not felt in the iron industry. The price of the Partners' coke was considerably reduced in order to keep both the coking collieries and Palmer's blast furnaces at Jarrow in production. A second reason was the high level of working expenses, especially at the former Grand Allies' collieries and Kibblesworth. Here Palmer was almost powerless, as this domain was Wood's and the Viewers under him, and here neglect seems to have been the order of the day, so much so that Southern, the Viewer for Kibblesworth and Springwell, was dismissed. As a result of all this large sums had to be spent to remedy the defects and Wood was so far displeased as to indicate that he might be willing to sell his share in the Partnership, but once again nothing happened. Despite all this, the profit for the half-year ending December 1860 was £24,956, which shows an increase over the figures for 1857 and 1858.

Two other events of importance occurred in 1860. In February Hutt had accepted office in Palmerston's administration as Vice-President of the Board of Trade with a seat on the Privy Council, which considerably relieved his financial difficulties. Then on 5th May the Dowager Countess of Strathmore died. She had never taken

an active interest in the Partnership, her contribution being entirely financial. She bequeathed her share in the firm to Hutt. With Bowes also having sold the Théâtre des Variétés, the two partners made fewer demands on the firm for short-term loans, though with bond repayments occurring regularly Palmer was still kept considerably short of funds. By the end of 1860, however, he had managed to sell the coke ovens at Blackwall and Grimsby, neither of these being profitable now that the railways which had once been their main customers had ceased to use coke for their locomotives. It was too early to say that the firm could look forward with confidence to a period of prosperity - the depression in the iron trade continued - but the days of serious financial crisis were over.

Unfortunately, the same could not be said as yet of the managerial side. The general discontent between Wood and the other three Partners came to a head in December 1862. Wood asked Palmer for a short-term loan on 20th December, and on being refused, demanded that a full meeting of Partners be summoned as soon as possible, as he would either have as much money advanced as the others or he would leave the Partnership. Bowes was annoyed, and wrote a fairly sharp letter to Palmer with instructions that it should be read to Wood. Wood was furious; he ordered Palmer not to advance any more money to anyone; he threatened a Chancery action against the others and also said he held Palmer personally responsible for all the Partnership debts not agreed to by the Partners at a meeting. Palmer regarded the whole position as impossible, and said that if Wood remained he

would give up the management entirely, as he would not be made liable for any "omissions after working as I have for so long to keep matters right." (1)

In the event nothing so drastic happened. On 30th December Wood, Palmer and R.P. Philipson, the Partnership's solicitor, met in Newcastle. As a result Palmer gave up some of his more detailed managerial duties, and the Partners appointed their first Secretary, John Vessey Gregory. Very little is known about the background of this man. He is first mentioned in letters in January 1852, and at the time of his appointment appears to have been Palmer's Chief Clerk. His work shows him to have been efficient, painstaking and thorough, and above all he was very loyal to the Partnership; in fact, the choice could hardly have fallen on a better man.

At the same time Wood gave up his superintendence of the Engineering Department to act purely in a consultative position as an owner. His position was taken by Cuthbert Berkley, who, like Gregory, was to be a devoted servant of the Company for many years. He is first mentioned as Assistant Viewer to Greenwell, whom he succeeded as Head Viewer of the western group of collieries on the latter's resignation in April 1854. Thus the management of the Partnership was put on a much more efficient footing, to its considerable benefit. When the Partners did not meet regularly,

(1) Strathmore MSS, Box 4, Durham County Record Office: letter from Palmer to Bowes, 27th December 1862.

to have one man as Managing Partner was quite reasonable while it remained a small concern; but when the concern involved over a dozen collieries and numerous coke-ovens, and when that man was also Managing Partner of an extensive ship-building and iron-works it would seem obvious that a change was imperative. One can only wonder that it was so long delayed and only occurred then partly by accident.

The Partners were not so fortunate in the men appointed to act as Secretary to the Northumberland & Durham Coal Company. Matthew Bell, Secretary from 1849, was dismissed in June 1863 for misappropriating the firm's money, and his successor, William G. Hepburn, fled the country in October 1870 after it was discovered that he had been using the firm's name to discount his own Bills. His successor, Roland Gifford, seems to have been more reliable, though a somewhat shadowy figure.

The year 1863 was also note-worthy in another direction - it was the first year in which a dividend was paid. Trade had been very good during the second half of 1862, and in March 1863 £31,000 stood to the credit of the Profit and Loss account. Some debts were still outstanding, but partly because Wood was in financial difficulties, Palmer proposed to divide £20,000 between the Partners. Bowes thought this was too much, and eventually the sum was fixed at £12,000, which was divided in April 1863, not apparently according to the proportion to the share held but according to the needs of each Partner. The year 1864 proved to be a good year - the profits in December were

£6,600 despite the presence of three "pays" in the month - and £9,000 was divided. After working for nearly 25 years without seeing a dividend it must indeed have seemed to the Partners that the tide was at last on the turn.

It must certainly have seemed so to Hutt, for after a successful negotiating mission to Vienna in the early months of 1865 he indicated his desire to give up the Board of Trade and ask for the Duchy of Lancaster. Lord John Russell took this as meaning Hutt wished to retire from the Government (which he did not) and wishing to bring Goschen into the Administration, offered Hutt a K. C. B., which after some hesitation was accepted. But Sir William Hutt's Knighthood was the only bright thing on the personal side of the Partners' lives. In April 1865 Palmer's wife died, leaving him with two boys aged 14 and 12, a blow from which it took him some time to recover. However, in July 1865 the shipyard and ironworks at Jarrow were combined into a Limited Company with the title of "Palmer's Shipbuilding and Iron Company Ltd" and Palmer as Chairman, which relieved him of a considerable amount of work.

But the most important event of 1865 did not occur until just before Christmas. For some time Nicholas Wood had been in failing health, and by the beginning of December it became obvious that he was sinking fast. On 19th December 1865 he died, at the age of 71, and was buried at Hetton, where he had lived in the latter years of his life.

In reviewing Wood's share in the Partnership, it cannot justifiably

be said that it always shows to his credit. His loyalty, perhaps naturally, was always stronger towards Lord Ravensworth & Partners than the "Marly Hill Co.", as he always termed it. His interest seems always to have been more in the engineering side of mining rather than in management, and with such a difference in age and outlook it is not really surprising that he and Palmer often failed to see eye to eye. Furthermore, there would seem to be some truth in Hutt's oft-repeated assertion that the engineering side of the Partnership, under the control of Wood and of which the other Partners had no specialist knowledge, cost them far more than the £500 paid to Wood every year up to 1863. This can only be put down to lack of time consequent upon the large number of calls upon his time. Yet his presence as a Partner undoubtedly added prestige to the partnership, especially in the early days, while his last major part in the direction of the Partnership resulted in the re-modelling of the management to deal more efficiently with changed circumstances. Nicholas Wood was one of the great men of industry in the first half of the nineteenth century. It would not be unjust to comment that his pioneering work on railways and his contribution to the coal industry and its trade will be remembered more than his role as a coal owner.

CHAPTER 4.

THE YEARS OF SLOWER EXPANSION : 1866 - 1885

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The years of slower expansion : 1866 - 1885.

The first problem after the death of Nicholas Wood was to decide the fate of his share in the Partnership. Under the terms of Wood's will the share passed to his eldest son, Collingwood Wood, sometime Viewer of Killingworth and now a consultant engineer. Wood accepted Bowes' invitation to take on his father's old post of Check-viewer to Lord Ravensworth & Partners (1), but as a Partner Palmer saw him as a probable interfering presence and was determined to "get rid of him entirely." (2). For his part Wood was not unwilling to sell, and in April 1866 he asked for £65,000. Palmer's reaction was brusque:

".....I told him that if he made an offer at £50,000 I would inform you about it." (3)

But at least Wood was willing to sell, and as a result Bowes and Palmer came to an agreement to share the purchase price equally. Terms were finally agreed in May 1866. The purchase price is believed to have been £55,000; the first payment of £20,000 was to be made almost immediately and the transaction was to be completed in July 1868. The first £15,000 had to be borrowed from the Partners'

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- (1) He was succeeded in September 1867 by John Daglish, formerly Head Viewer to the Marquis of Londonderry, and an old pupil of Nicholas Wood. Daglish also became Bowes' own Mining Agent.
 - (2) Strathmore MSS, Box 4, Durham County Record Office: letter from Palmer to Bowes, 27th January 1866.
 - (3) *ibid.*, letter from Palmer to Bowes, 28th April 1866.

bankers, Lambton & Co., but the other instalments were met as they fell due.

At the same time there was a re-arrangement of shares between the Partners. How exactly this was done is not recorded, but it gave each Partner a one-third share in both John Bowes, Esq., & Partners and in the Marley Hill Coking Company. It would not appear that any new Partnership agreement was drawn up to confirm this new arrangement.

The second half of the 1860's was a period of general prosperity for the Partnership. Receipts fluctuated. The profit in January 1867 was £6,931 and by the end of the year profits had risen to average £9,000 per month. Despite this there was an unaccountable loss of £3,600 in May 1868, and thereafter, although a profit was always recorded, trade remained very quiet, due mainly to a recession in the iron trade.

Meanwhile, Palmer's thoughts turned once again to expansion. West of and adjoining the Seaton Burn Royalty was Dinnington Royalty. About 1866 the Partners took a lease of this, and in the following year it was decided to sink a colliery on it at an estimated cost of £30,681 in the anticipation that the colliery would make an important contribution to the steam coal trade, now growing in importance as more steam-driven ships were built. The High Main seam was found at 35 fathoms in November 1869, and as it proved good household coal and was 4ft 10ins thick, Palmer ordered a second shaft to be sunk to work it. The original shaft was continued down to the Low Main seam

at 99 fathoms, and the colliery seems to have commenced production in the latter half of 1870 or the early part of 1871.

An opportunity for expansion also presented itself in County Durham. In February 1868 Palmer was approached by Mr. George Elliot, the Managing Director of the largest of the South Wales colliery companies, the Powell Duffryn Steam Coal Company, and also a coal owner in the North of England. Elliot suggested that the Partners might be interested in purchasing Wardley Colliery from him and exchange about 350 acres of his Felling Royalty and join it to the Wardley Royalty for a similar acreage of the Partners' Hylton Royalty, which the Partners had eventually leased from Bowes but had not developed; the piece of the Hylton Royalty which he would receive Elliot proposed to work from his colliery at Usworth, which he owned jointly with a partner named John Jonassohn.

Wardley Colliery was not a colliery in the true sense, but consisted of two shafts about 50 fathoms deep, on which work had been commenced in 1847 but which had been abandoned about ten years later, since when the site had lain derelict. It lay only about 100 yards from the Pontop & Jarrow Railway about half way between Springwell Bank Foot and Jarrow. Palmer was strongly in favour of purchasing it, believing that the remainder of the Hylton Royalty could be worked from it - a view subsequently disproved - and that a useful proportion of the Springwell coal could be worked from it. Its proximity to the Railway would also mean low transport costs to Jarrow. Hutt was not so enthusiastic, believing that the Partners would be better advised

to spend the money which would be needed to complete the Wardley winning on sinking a shaft on the Hylton Royalty, which consisted of 2,000 acres of coal, though of admittedly unproven quality, whereas Wardley's enlarged royalty would be only 700 acres. He also objected on the grounds that the expense would sacrifice present profit for some indeterminate future advantage from which he was unlikely to derive much benefit. But Palmer prevailed, and in April 1868 Wardley Colliery passed into the Partners' possession for £36,000. It was estimated that a further £27,264 would be needed to complete the winning and provide the necessary pitmen's houses. The colliery began production in the summer of 1871, a branch of the Railway having been laid to it, and was indeed to prove the valuable acquisition which Palmer forecast, though not quite at the level of 1000 tons per day of which he rather rashly spoke at one stage.

But trade at this time was still depressed, and during this period two of the Partners' collieries were temporarily laid in - Norwood and Dipton, the railway to the latter having been abandoned.

At this point, before the great upheavals of 1871 - 1873, a portion of a letter from Gregory to Bowes written in January 1870 is well worth quoting, as it gives an excellent review of the Partners' trade at this time and shows its distribution:

".....We have only two large contracts for coals, viz.,
1. The London Gas Co. - 70 - 80,000 tons, of which 55,000 are taken up to this date and the period for the remainder expires April 30. Price 13/3 delivered, including all expenses to their works at Nine Elms.

2. Stephenson, Clarke & Co (1) - 200,000 tons @ 6/- less $2\frac{1}{2}\%$, of which above 70,000 have been taken and the time for the remainder extends to March of next year.

For coke we have several contracts with various Iron Works in West Cumberland.

The No [rth] Eastern Railway contract has not been renewed. They are taking (and very slowly) the arrears of a former one.

We have a contract for coke with Palmers & Co (2) till 31 Dec next at 10/6 net. We have no written contract at present with that Co for coals and I think it would be desirable to make one, so as to secure ourselves against losing any portion of their large consumption which is of great importance to us. This I expect will shortly be a question for discussion, but our present arrangement and prices will go on till June 30 at least. They are a very fair scale of prices for different sorts and have not been substantially altered either in 1868 or 1869.

For export our contract engagements for either coals or coke are comparatively trifling. The trade is mostly procured from day to day at best obtainable prices." (3)

Gregory did not exaggerate the value of the importance of the trade with Palmers Shipbuilding & Iron Company, as elsewhere (4) he mentions that the coal and coke sold to them in 1869 brought the Partners nearly £80,000. Moreover, the Partners were in a very good bargaining position as they held 2,000 of the Iron Company's shares, which had been handed in September 1867 by Palmer to Bowes and Hutt on behalf of the Partners in partial payment of a debt of £100,000 incurred by

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- (1) This firm was the Partners' coal factors and had been so for some time.
 - (2) This is the abbreviation normally used in the letters to denote Palmers Shipbuilding & Iron Co. Ltd.
 - (3) Strathmore MSS, Box 4, Durham County Record Office: letter from Gregory to Bowes, 13th January 1870.
 - (4) *ibid.*, letter from Gregory to Bowes, 24th February 1870.

the Jarrow Iron Company in failing to pay for coal sold to it by the Partners; the Partners received regular dividends on these shares, thus boosting their own profit. Perhaps the most interesting fact which emerges from the above is the small and irregular amount of export trade, especially in view of former years. This trade obviously underwent severe fluctuation, for within a few years trade is mentioned with Spain, Guadeloupe and the West Indies.

But in January 1872 Bowes and Hutt received an astonishing proposal from Palmer - nothing less than that the concern should be sold to a limited company promoted by Palmer, who would presumably be its chairman. Palmer's motives for this are obscure, and he never explained them to Bowes, but from the way in which subsequent negotiations were conducted it is difficult to absolve Palmer from the charge of attempting to make himself the most powerful industrialist in the North-East. He could only have emerged from such a situation very well. He would have received a considerable sum for his share in the Partnership and still remain as Chairman of the company owning them, leaving his actual position virtually unchanged. His distinct lack of enthusiasm for any proposal that the concern might be sold to some other company in which he had no interest does not help his case, nor does his determination to fight for the proposal, even in an emasculated form, right to the bitter end.

But at the outset things looked fairly favourable. Bowes was initially opposed to the idea, but Hutt, now 71, saw it as a means of enjoying a very comfortable retirement. He also feared what would

happen to the Partnership if Palmer should die or retire, believing that he could not be effectively replaced. Thus when Palmer raised the matter again in February 1872 Hutt was prepared to agree, provided suitable terms could be arranged. Palmer suggested that if £1,000,000 were satisfactory it might be offered, but Hutt was inclined to stand out for £1,200,000. That such figures should be under discussion illustrates well the size of the Partnership and the position which it held in the coal trade at that time.

Unfortunately for Palmer, it was at this point that things first began to depart from plan. During the winter of 1871-1872 there was a tremendous upsurge in the iron trade, and consequently a sharp rise in the demand for coal. So sharp was the rise and so high the demand that coal owners were unable to cope, and there commenced what has been termed the "coal famine". Prices rose rapidly, and as they did so did the value of colliery property, investors seeing collieries as an investment likely to bring a quick return; as early as March 1872 Hutt reported that a colliery near Consett which had cost only £12,000 to sink had changed hands for £100,000. Under these conditions Hutt looked again at the proposed price of £1,000,000 and found it too low.

At the same time Palmer decided to perform the difficult operation of changing horses in mid-stream and made a new proposal - that the concern should be sold, not to a new company of his promotion, but to Palmers Shipbuilding & Iron Company. This was to prove a fatal move. Hutt was still disposed to sell, but he noted that the Iron Company's

shares, which Palmer had offered in part payment for the collieries, were only at $3\frac{1}{2}$ premium, much lower than other Durham iron companies such as Consett and Bolckow Vaughan, and Hutt warned Bowes that with this new proposal they stood in a very different position from Palmer. Moreover, Palmer had made the new proposal without consulting the Iron Company's Directors, some of whom he found to be opposed to the idea, and in May 1872 the Iron Company rejected the idea, though Palmer was sufficiently confident to say to Hutt that they would return to it shortly. He then wrote a formal letter to the Iron Company withdrawing the proposal, while at the same time he tried to whip up support for it - with such success that in the same letter in which he informed Bowes of the withdrawal he enclosed a letter from the Iron Company offering to re-open negotiations. But Bowes wrote to the Iron Company saying that he felt the Partners had been badly treated, and in August 1872 matters were abandoned for the second time.

But Palmer did not give up so easily as that. In October he got negotiations re-opened yet again, and in December both sides appointed a Valuer. It was no understatement when Hutt wrote in that month "Palmer is evidently very desirous of the amalgamation" (1), but circumstances now were very different from what they had been in January and were definitely unfavourable to Palmer. On the one hand,

(1) Strathmore MSS, Box 4, Durham County Record Office: letter from Hutt to Bowes, 24th December 1872.

the "famine" continued, and the average selling price of coal, which had stood at 5/2½d per ton in December 1871, reached 15/10½d per ton in January 1873 (1), a level it was not to reach again until after the First World War, and as a result the figure of £1,000,000 originally suggested was certain to be too low; while on the other hand, for some completely unaccountable reason in view of the great prosperity in the iron trade, Palmers Shipbuilding & Iron Company's shares fell steadily on the market from the 3½ premium of March 1872 to 4 or 5 discount in May 1873, to the great disquiet of Hutt, who urged on Bowes the greatest prudence in all negotiations.

In June 1873 Forster, the Partners' valuer, presented his report; and this must have considerably surprised the Partners, as it made all three of them millionaires. It must be admitted that the valuation was carried out at an abnormal period and that the figures are consequently inflated, but Forster's detailed analysis is interesting:

<u>"Northumberland Collieries, etc.,</u>	£	s	d
Seaton Burn and Dinnington	344,065	10	3
Killingworth	125,694	5	0
Benton Moor Royalty (2)	40,431	6	0
Gosforth	72,302	1	11
Brunton & Shields and Killingworth Railways (2)	98,474	16	9

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- (1) As quoted in the Accountants Certificates of the Durham Coal Owners Association, Vol. I.
- (2) The purchase of the Benton Moor Royalty and the Brunton & Shields Railway is discussed below.

<u>Durham Collieries, etc.,</u>	£	s	d
Wardley	454,010	18	7
Shipcote and Norwood	157,794	3	6
Hylton Royalty	107,213	14	0
Springwell and Mount Moor	301,076	12	6
Kibblesworth	228,748	6	0
Andrews House	168,664	16	8
Byermoor	255,948	5	11
Marley Hill	360,783	15	0
Brickworks (1)	24,558	9	9
Pontop and Dipton	249,371	15	5
Greencroft Royalty	74,829	16	0
Burnopfield	316,453	10	9
Pontop & Jarrow Railway	187,462	3	0
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	£3,567,864	7	0 (2)

This valuation is quite interesting for a number of reasons other than its total figure. It represents Wardley as the most valuable single colliery owned by the Partners, higher even than Marley Hill. It shows too the relative value of certain types of colliery, for it may be fairly noted that the Household coal collieries of Killingworth and Gosforth have the lowest individual value. Moreover, it shows to some

(1) At Marley Hill and Burnopfield.

(2) Strathmore MSS, Box 5, Durham County Record Office: letter from Hutt to Bowes, 14th June 1873.

degree the inflation in the value of colliery property between 1871 and 1873, for when Palmer renewed the Hylton lease in 1871 the value of the royalty then was estimated at only £1,000 because it was believed to contain poor quality coal greatly fragmented by dykes and consequently expensive to work, whereas now its value was listed at £107,213.

The receipt of this valuation immediately killed stone dead any idea of complete amalgamation between the Partners and the Iron Company, for the latter could not offer that price, nor would the Partners reduce the valuation to accommodate them. It was claimed that the Iron Company's valuation was eight times lower than Forster's, but that did not alter the position. Palmer wrote (1) that he considered Forster's valuation "excessive", a curious word to use when he stood to benefit more the higher it was.

Palmer's next move was to try to revive the original idea of forming a limited company "able and willing to purchase the whole property at once" (2), but this obtained no financial support in the City. He was therefore compelled to fall back on a smaller proposal - that the Iron Company should purchase Pontop Colliery and the adjoining Greencroft Royalty. Here again the problem was one of valuation. Hutt was willing to see Pontop and Greencroft sold, at least at first,

(1) Strathmore MSS, Box 5, Durham County Record Office: letter from Palmer to Bowes, 21st August 1873.

(2) *ibid.*, letter from Hutt to Bowes, 14th June 1873.

but wanted £250,000, though after some pressure agreed to £200,000. The proposed terms of sale were, to say the least, rather surprising, for on 1st July 1873 Palmer sent the following to Bowes:

"John Bowes & P^{rs} to make line from Dipton to Pontop and carry coals for 20 years @ 1/8 p[er] ton for coals and 1/9 p[er] ton for coke, to Jarrow. J. Bowes & P^{rs} to complete the present contract over 2 years and to purchase the produce of Pontop Ovens and Colliery at 23/- p[er] ton at ovens for first year, 18/- for second year. Coals - for first year 13/6 p[er] ton and for second year 10/6. Purchase price £200,000 - payment over three years for promissory notes falling due every six months." (1)

Thus the Partners were not to be offered a straight cash sale, even with promissory notes, for the £200,000 was to be whittled down in several ways. To extend the Pontop & Jarrow Railway to Pontop Colliery had been proposed in 1863, but although only a section just over one mile long it would have involved a gradient of 1 in 8 as well as two lengths of 1 in 30, and so a stationary engine would have been inevitable, and it was probably for this reason that nothing came of the idea. To build it now and provide the extra waggons which would be needed, in addition to one or two extra locomotives (none had been purchased since 1866), would have considerably reduced the purchase money. Yet despite this Palmer was proposing that the Partners should continue a contract with the Iron Company which he himself admitted soon after was unfavourable to the Partners, who should also purchase from the Iron Company "the produce of Pontop Ovens and Colliery" at

(1) Strathmore MSS, Box 5, Durham County Record Office: included with letter from Hutt to Bowes, 1st July 1873.

3/- per ton more than they were then selling it to the Iron Company.

In the event these objections were not to count, for the Iron Company asked their valuer to make a new assessment of the value of Pontop and Greencroft, and on receiving this offered little more than £150,000 for them, which the Partners, including Palmer, refused to consider. Thus after so many months of proposals and counter-proposals, or "palaver", as Hutt termed it, everything was back to square one. If Palmer was disappointed, as he must have been, it is not shown in his letters. By this time Hutt was indifferent to the whole idea, while Bowes was making excellent progress with the aid of the Partnership dividends in building the "John and Josephine Bowes Museum and Park" at Barnard Castle, where he and his wife intended to house their large collection of paintings and antiques. In addition he was working out his own ideas for the future of the firm.

As we have seen, the "coal famine" began about the beginning of 1872. The rise in prices was rapid; Gregory reported increases of 100% in some cases as early as March 1872, though he does not quote firms or examples. The Partners' profit in November 1871 would have been £6,800, about the same monthly average as for some years previously, though the figure was actually raised to £8,100 through the receipt of some arrears of payment. By contrast, the figure for October 1872 was £30,784, and as a result there is the unusual picture of Palmer asking Bowes on 1st October whether he would like £5,000 and then offering him another £5,000 within another 21 days - and this after a dividend of £10,000 each had been agreed on for the first half-

year! Palmer was not slow to take advantage of this unlooked-for prosperity. The few outstanding debts were paid off, and then he began to think about further expansion. In July 1872 the Partners purchased the Benton Moor Royalty, which adjoined Killingworth, and began to make plans to sink a new colliery on it, though not until the Dinnington and Wardley sinkings were completed. Preparations were set in hand for sinking a colliery on the long-neglected Hylton Royalty. Dipton and Norwood Collieries were opened out again, the former recommencing production in April 1873 and the latter at the end of the year. On the coking side the sale of the Dublin and Belfast Ovens was finally concluded in October 1873, so that the Partners now owned no ovens outside County Durham.

Undoubtedly the most important purchase of 1872 was that of the Brunton & Shields Railway in July. This was the name given to a privately-owned railway which conveyed coal from Dinnington, Seaton Burn and Burradon Collieries down to the North Docks at Percy Main, on the River Tyne. It was built in 1826 and consisted of both inclines and locomotive-worked sections, with a total length of about $7\frac{1}{2}$ miles. As it was in private hands, the Partners had to pay dues on all coal carried, as did the owners of Burradon. Palmer, believing that it was clearly in the interest of the Partners to own the line, opened negotiations and completed the purchase before Hutt and Bowes knew anything of it. The price was £23,000, and Palmer added, in a letter to Hutt,

".....I hope you will approve the purchase, as it adds value to our Northern Collieries by uniting them by our own railway system and it should reduce the cost of working the Killingworth Railway. We will take possession at once. Of course, having all the waggons to work together will greatly facilitate our operations..." (1)

and he anticipated that the line would be paid for by the saving in dues and the dues charged for Burradon coal. Shortly afterwards a link with the Killingworth Railway was constructed, so that the two railways could be worked as one, with a resultant increase in efficiency and economy.

But this sudden prosperity for the coal owners also brought trouble with it. The first miners' union was formed at Wearmouth Colliery in Sunderland in 1869, and with the coal trade doing so well the men's demands increased. Between April 1871 and April 1872 wages rose by an average of about 13%, though at the Partners' collieries the increase was between 16 and 18%. Small strikes erupted everywhere, and Gregory's complaint that the Partners were not receiving the full benefit of the increased prices because of a fall in output must have been echoed by most coal owners, though his words read strangely when one sees that the output figure for the Partners' Durham collieries rose from 944,040 tons in 1871 to 947,631 tons in 1872, though it did fall below 900,000 tons in 1873 (2).

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- (1) Strathmore MSS, Box 4, Durham County Record Office: letter from Palmer to Hutt, 2nd July 1872, a copy of which was enclosed in a letter from Gregory to Bowes of the same date.
 - (2) Statistical Returns of the Durham Coal Owners Association, Durham County Record Office: Vol. Nos. 18 (1871), 19 (1872) and 51 (1873).

Faced with this unrest among their workmen the owners also felt the need for some association, and following the success of the "Steam Collieries Defence Association" in Northumberland, Palmer took the initiative in attempting to form a similar organisation in Durham. On 15th February 1872 the inaugural meeting of the "Durham Coal Owners' Association" was held in Newcastle, with Palmer in the chair, and John Bowes, Esq., & Partners the largest firm represented. It was specifically formed as a protection against the workmen. One of its main rules established that any claim for an increase in wages by the men should be dealt with, not by the owners of the colliery concerned, but by the Association, whose decision would be binding. In addition, in the event of a strike, the Association would reimburse the loss incurred by the owners. It was hoped that:

"..... a large and powerful association will be the result; for the demands of the men are so unreasonable that such an association is absolutely necessary to deal with them." (1)

Despite the formation of the Association, further wage rises of between 10 and 15% were granted in July 1872, but thereafter the situation became a little calmer.

However, the wide-spread belief that the coal owners would do nothing for their workmen unless forced cannot honestly be said to be true of the Partners. It is true that they received large dividends during 1872-1874, and also that part of their profits was spent in expanding their business. But all of the Partners realised that this prosperity would not last and that the opportunity should be taken to

(1) Strathmore MSS, Box 4, Durham County Record Office: letter from Gregory to Bowes, 16th February 1872.

carry out a vast capital works programme. This was inaugurated on 23rd August 1872 at the half-yearly meeting of Partners, which had been customary since at least September 1867, (Gregory taking the minutes, and on the occasions when Bowes was not present the meeting was treated as formal if he approved of the minutes). Some of the outlay went on modernising the collieries and opening up Dipton and Norwood. A good deal more was allocated to constructing a brickworks at Byermoor, where new coke ovens were also to be erected. A further sum went towards the purchases above-mentioned. But a considerable amount was allocated for building new pitmen's houses or modernising old ones. Three hundred houses were started at once between Killingworth and Benton Moor, and modernisation started at the former place. In Durham houses were allocated to Wardley, Kibblesworth and Andrews House, and during the next twelve months £15,000 was allocated for houses at Gosforth, Benton Moor, Seaton Burn, Springwell, Andrews House, Byermoor, Burnopfield, Dipton, Wardley and the proposed new winning at Hylton. As Palmer put it in December 1873, when the "famine" was almost at an end,

"..... No doubt the trade will show a great reaction: it is better, however, to have our concerns set right before it comes so as to carry on without loss at any of them." (1)

In the half-yearly meeting of 4th October 1873 an expenditure of £175,000 was proposed, though it seems that subsequently this figure was somewhat reduced. Hutt regretted that the large expenditure

(1) Strathmore MSS, Box 5, Durham County Record Office: letter from Palmer to Bowes, 3rd December 1873.

would reduce the amount available for Dividend, but appreciated its value:

"..... The large outlay we have made and are making for this extension is contrary to the policy to which I as an individual am inclined, but there is no doubt that in relation to a future which I may not see the extension is judicious." (1)

Such outlay would not have been possible without a very much increased income, and this the "famine" gave them. The profit on the second half of 1872 was £160,000, which probably means that the total profit for the year was in the region of £275,000. The figure for the first half of 1873 was £169,000 and the figure for the second half about £150,000, so that in two years the Partners amassed a total profit of about £600,000. One can easily see why the Partners felt able to give themselves a dividend of £30,000 each on the first-half year of 1873.

As Hutt said, the time had indeed come when the Partners should look to the future. For it was now an ageing Partnership. Hutt had decided to retire from Parliament at the next General Election. At the end of 1873, when he was 72, he wrote to Bowes:

"..... I am, as Othello says, declining in the vale of years, and however vivacious now, must soon be below the horizon." (2)

He had remarried in 1861, and in 1873 finally gave up his tenancy of

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- (1) Strathmore MSS, Box 4, Durham County Record Office: letter from Hutt to Bowes, 25th August 1872.
 - (2) Strathmore MSS, Box 5, Durham County Record Office: letter from Hutt to Bowes, 26th December 1873.

Gibside to divide his time between a London house in Grosvenor Square and a large house on the Isle of Wight, his birthplace. Bowes was now 62, not in the best of health, and soon to suffer a greivous loss in the death of "Madame". Palmer was now 51, and in 1874 was to enter Parliament as the Liberal member for North Durham. For him the future was still bright; but both Hutt and Bowes were childless and had thus to think about the disposal of their share in the Partnership in the event of their deaths. Both realised that the future of the Partnership's holdings lay with the Palmer family, and at the meeting of 23rd August 1872 this question was raised in connection with Palmer's second son, Alfred, who was then 18. Hutt reported:

"..... You will see that young Palmer is to be a sort of Vice-Roy in the Office, with a salary of £500. I had some private conversation with Gregory about this new arrangement and I found (for I believe he spoke honestly) that he thought well of it. Young Palmer is an active, intelligent and well-conducted young fellow..." (1)

Alfred Palmer was to play an important part in the future of the Partnership.

But the question of the disposal of shares still remained. Hutt determined to leave his share to his wife after his death, but Bowes had different ideas about his portion. Immediately after the fruitless negotiations with Palmers Shipbuilding & Iron Co. Ltd. had come to an end he began discussions with Hutt with a view to converting all his

(1) Strathmore MSS, Box 4, Durham County Record Office: letter from Hutt to Bowes, 25th August 1872.

Colliery property into real estate. It seems from a letter of Hutt's dated 4th October 1873 that he proposed to bequeath the proceeds of his interest in the Partnership to a charity, and with these two aims in mind he proposed that the Partnership should be converted into a joint-stock company. Unfortunately Bowes' property was still subject to the requirements of the 10th Earl of Strathmore's will, and it transpired that there was already an important decision of Chancery against Bowes adopting the course that he wished. Furthermore, when the scheme was put to Palmer he was found to be strongly against it - rather curiously, in view of his attitude of 1871-1873. Hutt believed that he could be outvoted on the question of its adoption, although this was not a desirable course to follow.

Nevertheless Hutt and Bowes proceeded with the plan, with Palmer now on the defensive. Both of the older men wished to convert the Partnership to a limited company in such a way that the essential management was left undisturbed, and this does not seem to have been purely to mollify Palmer. To undertake the conversion at all involved an increase in the number of Partners to seven, and here was the first rub. Hutt proposed his brother General George Hutt, and thought Palmer might be willing for one or two of his sons to join, but the whole thing was very nebulous. Palmer, on the other hand, seemed to think that he had been betrayed by the others. Hutt wrote in March 1874 that Palmer had written to him:

"..... I don't like the business at all. I don't think it should be forced on me in this manner, knowing how I have devoted my life and energies to the concern and what has been the result."

and added:

"..... He intimates - I thought he did once in conversation - his own disposition to draw out of the Partnership." (1)

The threat of retirement - for it was only a threat - shows how deeply Palmer opposed the plan, and yet nowhere are his objections stated, and it is very difficult to decide what they might have been. Bowes and Hutt had to look to the future, and Palmer must have appreciated this. Yet he first asked Bowes if he was willing to sell his share in the Partnership, and on being refused he relapsed into a general attitude of non co-operation, hardly even attending to his duties as Managing Partner.

Nevertheless the plan was brought to a head in March 1875. The position was summarised by Gregory as follows:

"..... I have been with Mr. Philipson (2) today going through the Articles of Association, etc, of the new Company, and he will, in a few days, after he has revised them, return them to Mr. Western. (3)

Mr. Western has put the shares and purchase money partly in accordance with the scheme submitted to the last meeting of Partners, without noticing all the amendments of that scheme which the meeting adopted.... You have a copy of the minute, but it has not yet been signed. It gives the scheme as follows:

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- (1) Strathmore MSS, Box 5, Durham County Record Office: letter from Hutt to Bowes, 9th March 1874.
 - (2) R.P. Philipson was Solicitor to John Bowes, Esq., & Partners.
 - (3) E. Y. and G. A. Western were John Bowes' London solicitors. E. Y. Western in fact conducted Bowes' affairs, Western's brother only doing so during his absence.

shares

3,000	£500 fully paid up	£1,500,000
996	£125 paid ----	<u>124,500</u>
	making the purchase money	£1,624,500

4	£125 to be paid and allotted to make the required number of shareholders	<u>500</u>
<u>4,000</u>		£1,625,000

leaving unsettled liability of 1,000 shares at £375	<u>375,000</u>
	£2,000,000

Mr. Western has included "bond debts" in the things to be transferred to the new Company. If this be done the liabilities must also be discharged by the new company and that would be by far the simplest plan and would (Mr. Philipson says) be perfectly legal. It would save valuations, inventories and a deal of labour. The new Comp[an]y would under this plan take on all the balance of D[ebito] and Cr[edito] as they stand in the books at the date of transfer (excepting shares in Palmers & Co (1) and except Profit and Loss in the Partners' individual a/cs).

Mr. Philipson desires me to mention to you and Mr. Palmer that all the Leases from you to the firm ought to be completed and signed before the new Company can be formed." (2)

This letter has been extensively quoted because it shows the advanced stage which the arrangements had reached in March 1875. As may be seen, the change was planned to make as little difference as possible, for Bowes, Hutt and Palmer were to hold all but four of the shares at a value of £1,624,000, while the new Partners were to have only one £125 share each. Perhaps the other striking point is that

(1) The shares in Palmers Shipbuilding & Iron Co. Ltd. were in the name of Bowes and Hutt as individuals on behalf of the Partners.

(2) Strathmore MSS, Box 5, Durham County Record Office: letter from Gregory to Bowes, 12th March 1875.

the concern was now valued at £2,000,000 compared with the £3,844,000 of the palmy days of only two years previously.

But with this stage matters stopped; after March 1875 we hear no more of the scheme. This is most surprising, the more so in view of the fact that Bowes especially was in such earnest about it. Nor does it seem likely that the reason for its discontinuence is that Bowes and Hutt gave way to Palmer at the last minute. It seems more likely that the true explanation may be found in the growing depression in the coal trade. The "famine" began to come to an end slowly during the latter part of 1873, though even in the first half of 1874 the Partners, despite their large programme of capital expenditure, were still able to declare a dividend of £90,000. But so great was the decline after this that for the first half of 1875 there was no dividend at all, despite the achievement of raising over one million tons (1) of coal from the Durham collieries for the first time. With each of the Partners heavily committed in his private expenditure - Bowes with his Museum at Barnard Castle, now to be in memory of his wife after her death in February 1874; Hutt with his new home on the Isle of Wight; and Palmer with his most recent venture, the Tyne Plate Glass Works (2), into which he had been persuaded to put money, only to find it was heavily in debt - the Partners began to find it increasingly necessary

(1) The actual figure was 1,036,185 tons.

(2) Palmer became connected with this firm in 1870. It was always in debt, and was easily his most disastrous investment.

to obtain short-term loans, often for considerable amounts, from the Partnership. If the firm had been a limited company this practice would have been impossible, and so while this situation continued, which it seemed likely to do until either the Partners' commitments ended or trade revived, it was not in the interest of any of them to proceed with the conversion, the short-term requirements being more demanding than the long-term ones.

The proposal to convert the firm into a limited liability company was one of a number of things which had gradually been driving a wedge between Palmer and the other Partners. This process had begun in 1871 with Palmer's own proposal for a limited company, to be followed by what looked suspiciously like a take-over bid from Palmers Shipbuilding & Iron Company. In addition, Hutt felt that Palmer, as Managing Partner, was not paying sufficient attention to the firm's business; certainly, during 1874 Palmer seems to have visited the Newcastle Office on only one or two occasions, though he could perhaps plead the two Parliamentary contests in which he was involved for North Durham (1). Perhaps because of the expense of these contests, but also because of the poor financial health of the Glass Works, Palmer had borrowed up to June 1875 £96,000 from the Partnership, and as this had been done without informing his fellow-Partners they were none too pleased when they discovered it. Furthermore, Palmer wanted, and obtained, permission to use the name of John Bowes & Partners to obtain

(1) He was elected on both occasions.

credit for the Glass Works, and although this was covered by what Palmer claimed was ample security, Hutt disliked the affair and felt that Palmer had made no effort to raise money from his personal sources. This ill-feeling did not help the firm, for at a time of depression detailed attention to business was needed, and with Palmer doing very little, Bowes suffering badly from gout and Hutt in poor health on the Isle of Wight, the whole responsibility of managing the firm's affairs fell upon Gregory.

But Bowes saw full well that if the Partnership were to continue to prosper all the Partners had to be on good terms with each other, and the year 1875 gave him his opportunity to act. This year marked thirty years in Palmer's association with Bowes and Hutt, and to mark this he proposed to Hutt in February 1875 that some form of presentation should be made. This eventually took the form of a present to Mrs. Augusta Palmer in the shape of an expensive diamond necklace, which Bowes and Hutt presented in June 1875. Mrs. Palmer seems to have been a shrewd woman, and at once seized the chance of bringing about a reconciliation. In writing to thank Bowes she added

"..... Allow me to say that I hope the estrangement that has existed of late years may pass away, as I need not say I know full well how many years you and my husband have been on terms of intimate friendship. It would be fanciful to me to think that we should not hereafter be on the same cordial feeling of friendship as at one time existed. This splendid gift convinces me that such is your desire, and this again enhances the value of the presentation and adds much to my happiness." (1)

(1) Strathmore MSS, Box 5, Durham County Record Office: letter from Mrs. Augusta Palmer to Bowes, 25th June 1875.

To which Palmer added as a postscript to his own letter of the same date

".....My wife has just shown me her letter; let me unite in the hope expressed in the latter part." (1)

With all the charm and guile of her sex Mrs. Palmer brought the Partners together once more. Although sadly she was to die of typhoid before six months had passed, she did live long enough to see her success. Palmer gave up his summer holidays to work alone at the Newcastle Office (Gregory was on holiday), and from now on he spent more and more time there, until by 1877 he devoted three days a week to this. Differences there still were, especially over money; but he reported on business constantly to Bowes, and the friendly relations between all three Partners were restored, at least for a time.

Despite the growing depression in trade, the Partners began to sink a new colliery in 1874. This was Dunston Colliery, situated about two miles west of Gateshead very near to the River Tyne. It was intended that the new pit should replace Norwood Colliery - indeed, Dunston was sometimes referred to as "Norwood New Pit". It was probably sunk to add to the Partners' share of the gas coal trade, which seems to have suffered least in the depression; whereas to have carried through the now-abandoned plans to sink collieries on the Benton Moor and Hylton Royalties would have cost far more. Dunston came into

(1) Strathmore MSS, Box 5, Durham County Record Office: letter from Palmer to Bowes, 25th June 1875.

production in 1875, and during that year 67,000 tons were raised; but as the depression grew worse stern measures had to be taken, and in November 1876 Dunston was laid in, destined to lie idle for nearly fourteen years.

The depression in trade of all kinds developed fairly rapidly after 1873. In that year the average price of coal was about 15/- per ton and of coke 36/- per ton; by 1878 these figures had fallen to about 5/- and 12/6 respectively, though the prices obtained by the Partners were slightly higher. When two of the firm's largest contracts were renewed in May 1877 Gregory stated that the price to be paid by the London Gas Company, who took 100,000 tons, was 14/- delivered, or about 7/3 at the pit, and that paid by Stephenson Clarke (120,000 tons) was 7/- less $2\frac{1}{2}\%$, both of which were about ninepence lower than in 1876 (1). But as early as August 1875 Palmer reported that all of the Partners' coke trade in Cumberland and North Lancashire had gone, and that there was a distinct possibility that one or two of the blast furnaces at Jarrow would have to be shut down, which would probably mean that Marley Hill would have to close. Working charges had increased, despite considerable reductions in the men's wages, and he thought that in North-East England generally there was over-production of coke (2). This would seem to be borne

(1) Strathmore MSS, Box 5, Durham County Record Office: letters from Gregory and Palmer to Bowes, 16th and 12th May 1877.

(2) *ibid.*, letter from Palmer to Bowes, 20th August 1875.

out by the statistics, for in 1874 the six firms (1) who contributed over half of County Durham's coke production manufactured 1,923,211 tons, which rose in 1875 to 2,069,519 tons - and significantly, of those six the Partners were the only firm to show a reduction in output (2).

In such circumstances the closure of collieries was almost inevitable. Collieries began to be abandoned in County Durham as early as 1874, but the Partners managed to survive until September 1876, when half of Byermoor was stopped. This was followed by the closure of Dunston in November 1876, Gosforth in September 1877, Dipton in March 1878 and Shipcote in the spring of 1879. Dipton recommenced production during 1879, but with the exception of Dunston the others never re-opened.

Despite the depression it seems that the Partners were still making a profit, admittedly very small, on both coal and coke. But as money grew scarcer all the Partners leaned heavily upon the firm for money, especially Palmer, who by the end of 1882 owed the firm just under a quarter of a million pounds. By 1878 Hutt owed over £34,000 and Bowes about £50,000. As a result Gregory had no money

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- (1) Bolckow, Vaughan & Co., Consett Iron Co., North Brancepeth Coal Co., Pease & Partners and Strakers & Love, in addition to the Partners.
 - (2) Compiled from the Durham Coal Owners Returns Nos. 73 and 89. Pease & Partners' entry is missing from the former; their output has been taken at 570,000 tons.

to pay ordinary bills, and loans had to be obtained. The crisis came at the beginning of October 1878, when the firm were unable to meet a Bill for £5,000 drawn by Hutt. If the Bill were dishonoured the Partnership would be ruined, and Hutt at first refused to renew the Bill; but literally at the last minute he placed a security with his bankers to meet it, and afterwards loaned to the firm £15,000 in addition to paying Bills worth £10,500 given to him by the firm.

This financial crisis brought about the final breach between Hutt and Palmer. In October 1878 Hutt had first accused Palmer of being "reckless", only to write four days later "I have great confidence in the energy and skill of Palmer" (1). But over the next two years their relations deteriorated to such an extent that when Bowes and Palmer went to the Isle of Wight to see Hutt in the autumn of 1881 Sir William refused to see Palmer. After Sir William's death Lady Hutt's solicitor indicated that Lady Hutt held the view that Bowes had sided with Palmer against Sir William and connived at his obtaining large sums of money from the firm both illegally and despite Sir William's refusal. Bowes was greatly hurt by this, and Lady Hutt withdrew the charge. Although Hutt eventually became so ill that he was unable either to handle business or reason logically, there is little doubt that the prolonged financial crisis in the firm's affairs between 1876 and 1886 ought not to have occurred. The reason why it did was

(1) Strathmore MSS, Box 5, Durham County Record Office: letters from Hutt to Bowes, 3rd and 7th October 1878.

the part played by Palmer during this period.

The crucial factor here was the Partnership's entanglement, via Palmer, with the affairs of the Tyne Plate Glass Works. As a later writer put it:

"..... It would appear that Mr. Palmer has always had great confidence in the undoubted business ability which he possesses. He appears also always to have been of a sanguine disposition, expecting that everything which he undertook would turn out successfully." (1)

Although this view may be a little harsh on Palmer, his involvement with the Tyne Plate Glass Works was disastrous from beginning to end. He needed money badly, and the firm, fearing that if he went bankrupt John Bowes & Partners would crash with him, lent him money in an attempt to keep him solvent. This process could not continue indefinitely, and Palmer was no doubt desperately hoping for an improvement in trade; but in the meantime he seems to have had no qualms about leading John Bowes & Partners into a parlous state.

Furthermore, the condition of the Glass Works demanded a large portion of Palmer's time, thus depriving the Partners of his guidance. Neither he nor Gregory was an engineer, and so could not inaugurate the economies in the working of the collieries and ovens which were essential in a time of depression. This, coupled with his only partial attention to the managerial side, caused the firm rather to drift along

(1) Strathmore MSS, Box 8, Durham County Record Office: Memorandum by E.Y. Western and G.A. Jamieson to Lord Strathmore, Lord Glamis and Bowes, May 1885, 20.

rather than to face the depression with any kind of energy, resolution and sense of purpose. Gregory obviously did his best, but he does not seem to have had either the flair or the personality which Palmer possessed. The Coal Owners' Statistics show that compared with other large firms on the coal-field the Partners tended to lose ground between 1871 and 1880. This was especially so on the coking side of their business. Although a complete comparison between 1871 and 1880 is impossible due to the loss of some of the returns, those which are extant show that the Partners produced only 205,400 tons in 1877 compared with 209,105 tons in 1872. By contrast, the output of all the other large producers, with the exception of Strakers and Love, increased, that of both Bolckow Vaughan and Consett by well over 100,000 tons. Furthermore, in 1878 three more firms were producing over 100,000 tons per annum compared with 1872. Thus both the Partners' output and their share of the market fell during this period. The coal figures appear rather better on the surface than in reality, as the Partners raised 944,040 tons in 1871 from the Durham collieries and 1,145,081 tons in 1880 (1); but in fact the output from Marley Hill, Byermoor, Burnopfield and Kibblesworth was less in 1880 than in 1871, the increase being largely due to Dipton and Wardley being in full production and a slight increase of between 20,000 and 30,000 tons from Pontop and Springwell. None of the collieries in either county was

(1) Wardley Colliery was not included on the 1880 return; 135,000 tons has been allowed.

raising 200,000 tons, though this was achieved by a number of collieries owned by other firms (1). Moreover, both Bolckow Vaughan and Consett increased their output by approximately 500,000 tons, the former company twice achieving two million tons in this period; while the number of firms raising 500,000 tons per year increased by five (2). Thus, although prices fell, this was in general a period of rising production, and in this the Partners did not fully share. The Partnership's acute lack of money left the firm with no means for capital investment, while Palmer's pre-occupation elsewhere deprived the firm of dynamic leadership. As a result, the firm steadily lost ground to its competitors during this period.

Thus matters stood in the autumn of 1831, when a proposal came before the Partners which brought the disagreement between Palmer and Hutt to a head. This was an offer by Sir George Elliot and Mr. John Jonassohn to sell to the Partners Usworth Colliery, which they owned jointly, and which lay about $1\frac{1}{2}$ miles north-east of Springwell Colliery. The history of this colliery is inter-twined with that of the Hylton Royalty, which, it will be remembered, also belonged to John Bowes. Its history is perhaps best told in his words:

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- (1) In South Wales it would appear that very few collieries raised over 100,000 tons at this period: cf MORRIS, J.H. & WILLIAMS, L.J. The South Wales Coal Industry, 1841-1875. Cardiff: University of Wales Press, 1958, p.134.
 - (2) Less than a dozen firms in South Wales were raising 500,000 tons at this time: MORRIS, J.H. & WILLIAMS, L.J., op. cit., p. 136.

"..... Some thirty five years ago Mr. Elliot (now Sir George Elliot) made me an offer to take a piece of this large royalty (about 2,300 acres with three seams of coal). This offer was low as regards the Tentale rent, but he would probably have increased it. Mr. Palmer, however, with the sanction of Sir William, made me a separate offer on the part of "John Bowes & Partners", which I accepted, and at that time it was no doubt the intention of the Partnership to work the coal at an early date. Years, however, rolled on without that being done, and about 8 or 9 years ago from my connexion with the Partnership I granted a new lease, making such concessions to them as my Professional Advisers said no other person would have done, and by which I sacrificed my claim to a large sum of money from them. I did this in the belief and anticipation that before long the coal would be worked by John Bowes & Partners or sublet by them to other parties who would do so. In fact, a certain portion of the Royalty has been sublet and worked by the owners of Usworth Colliery (Sir G. Elliot and Mr. Jonassohn). These gentlemen have had some serious misunderstanding and, I understand, detected malversions in their accounts, and have therefore determined to sell the colliery and thus offered it to us." (1)

Thus to purchase Usworth Colliery would mean that the Partners could at long last work the Hylton Royalty without the expense of making a separate winning on it, the cost of which was now put at £200,000. Moreover, Usworth was a large colliery - its output in 1881 had been 320,492 tons - and Palmer argued that it would be possible to pay the instalments for the purchase as they fell due over five years from the profits of the colliery, so that the firm's debt would not be increased and money would not have to be taken from the profits of the other collieries to meet the cost. Bowes, of course, was in favour of the purchase as at last offering the possibility of an income from a large source so long denied him.

(1) Strathmore MSS, Box 6, Durham County Record Office: copy, in his own hand, of letter from Bowes to Lady Hutt, 24th February 1882.

By the beginning of 1882 Hutt was so ill that he could not handle business, and control of his affairs was taken over by Lady Hutt, who regarded Palmer's influence in the firm as pernicious and who alternated between trusting and distrusting Bowes. She was strongly opposed to the purchase, and so at the meeting of Partners on 16th March 1882, at which only Palmer was present, the decision to purchase Usworth for £50,000 - a small sum, considering the size of the colliery, was taken by a majority of two to one, Bowes assenting by post. The Partners took possession on 20th March, and the colliery proved a valuable acquisition. Its general superintendance passed under Palmer's brother Alfred, who was Viewer at Wardley, but as the actual colliery viewer R.M. Berkley, the son of Cuthbert Berkley, so long the Partners' Chief Viewer, was appointed, again the beginning of a long association with the firm and another example of the paternal nature of many of the colliery companies in the North-East.

Lady Hutt had not been pleased with the lack of regard paid to her views on the purchase of Usworth Colliery, and she was even more annoyed when almost immediately Palmer began to show an interest in acquiring yet another colliery. The colliery in question was Felling, for which the Partners had negotiated unsuccessfully between 1860 and 1862, and by coincidence the owner was again Sir George Elliot, though this time he was sole owner. Here the position was rather involved. Elliot had decided to sell the colliery, and was negotiating terms with the Ecclesiastical Commissioners, whose representative, by a curious coincidence, was Lindsay Wood, one of Nicholas Wood's sons. The

Commissioners in turn were looking for a new owner to take the colliery on lease, and were prepared to grant very favourable terms.

At first Palmer took little notice of Wood's overtures, but on hearing the terms he at once opened negotiations, as the acquisition of the Felling Royalty would greatly enhance the value of Wardley. The Commissioners offered to lease Felling and its associated royalties to the Partners for only £800 per annum; the Partners were to pay £5,000 for the stock and were also to erect a pumping engine to drain all the pits and royalties to the east, including Hylton, at a cost of another £5,000, though the Commissioners were to meet £3,200 of this over a period of eight years; the colliery's private railway and its staithes on the Tyne the Partners were to receive for nothing. Once again Lady Hutt was strongly opposed to the idea, and once again she was ignored; on 23rd November 1882 the Partners agreed to accept the terms offered. A dispute between Elliot and Wood held matters up for a time, and it was not until 5th March 1883 that the Partners took possession. It was to be the last colliery ever taken over by the firm.

But while one colliery was being added to the firm another ceased production. This was Killingworth, where on 5th April 1882 the shaft partially collapsed whilst under repair. It was felt that the cost of repairing the shaft or of sinking a new one to obtain the small amount of coal which remained in the High Main seam was not justified, and so the shaft was filled in. Thus perhaps the most famous colliery in the history of the Industrial Revolution ceased

production. (1)

Shortly afterwards the Partners suffered another serious accident, this time at Jarrow. In September 1882 Palmer decided that the staithes built there in 1854-1855 were obsolete, and ordered their replacement. The new staithes were almost finished when in the afternoon of 22nd May 1883 they were completely destroyed by fire, ignited, it was thought, by sparks from a nearby lead factory. Fortunately, the Partners suffered no financial loss, as they were both covered by insurance and could also continue to use the old staithes until another new set were built.

Reference has already been made to Sir William Hutt's incapacity to attend to business after the autumn of 1881. By the summer of 1882 he was blind and almost permanently bed-ridden, and on 24th November, three weeks after his 81st birthday, he died.

Hutt's part in the history of the firm is difficult to assess. He became a colliery owner by accident, and over the years he derived great financial benefit from the very small amount of capital which he had invested in the firm. From the firm's viewpoint his lack of technical knowledge was a handicap, as was his concentration on a political career, for a firm as large as the Partnership was needed full time direction. But he was always seeking economy and efficiency, and his was often the note of caution. Moreover, his personal charm did much to keep the Partners together, especially when Nicholas Wood was alive.

(1) Killingworth had for many years been the administrative centre for the Partners' collieries in Northumberland, and this continued even though Seaton Burn and Dinnington were the only collieries still owned in the county.

Under the terms of Hutt's will his share in the Partnership passed to Lady Hutt. The question was whether she would retain it, and if not, to whom and for what price it would be sold.

Lady Hutt's first move was to demand a thorough investigation into the firm's affairs, prompted not least by Palmer's large debt. Bowes at first had grave misgivings about this, fearing that it would damage the credit of the firm and would imply bad management on the part of Palmer and Gregory, but he was eventually persuaded by Western, his solicitor, that if such an investigation (provided it were conducted by an independent and competent person) found nothing wrong it would be a comfort to know this, while if any improvements were suggested he and Palmer could consider them and adopt them if they were felt to be to the firm's advantage. Palmer, on the other hand, preferred not to notice these advantages, and instead wished to buy Lady Hutt out, a proposal he put forward as early as 14th November 1882, so that the demand for an investigation would be removed. Nevertheless, an investigator named Markham (1) was appointed, and he began work in January 1883.

Meanwhile Palmer opened negotiations for the purchase of Lady Hutt's share by himself and Bowes, though he had no authorisation from Bowes to do so. He told Western that his reasons for doing this were that Lady Hutt's share could be bought much below its real

(1) Nothing is known of this man, unless he was one of the firm of G. Markham & Co., Engineers of Chesterfield. He was known - and liked - by Palmer.

value; that she would accept payments in such long instalments that there was a reasonable prospect that these could be met out of the profits on her share; and that in any case he and Bowes had no obligation to keep her as a Partner and let her share in the expected profits after she had made herself so disagreeable. On 13th February 1883 he offered £150,000 payable over seven years, with £1,000 per annum during Lady Hutt's life.

While Lady Hutt was considering this, Markham made his report to her. He suggested two possible courses, firstly, that the firm should be turned into a limited liability company, or alternatively, that it should be sold to Palmers Shipbuilding & Iron Co. Ltd. Unfortunately, neither of these proposals was practicable. As Western pointed out, to convert the firm into a limited company at this stage would limit its credit, though Palmer had told Western he looked forward to this move (a strange comment when he would be the most affected). With regard to the second proposal, Markham said that Palmers would be willing to pay £500,000, but he refused to reveal the source of this information. Palmer was opposed both to selling his share and to Palmers Shipbuilding & Iron Co. buying. Since his influence in the latter would decide the matter, this course was closed also. Bowes too opposed a sale, hoping that prices would soon revive and profits be made once again.

Thus Lady Hutt could do nothing about either of Markham's suggestions, and at the end of February she also rejected Palmer's offer, hoping, as her solicitor said, that he would improve his bid.

Under the Partnership Deed, if a Partner wished to sell his share he was required to give notice to the other Partners so that they could exercise their option to buy it; if this option was not taken up after six months the share could be sold on the open market. Now Lady Hutt had refused to sign the Partnership agreement to avoid becoming personally liable for the firm's debts. Her position was thus ambiguous, and she took full advantage. She stated her own terms to Palmer (1), and demanded a reply before 21st April, well within the six months limit. Then before even this time had passed she offered the share to one of the Directors of Palmers Shipbuilding & Iron Co., asking £150,000 (as Palmer had originally offered) but payable over five years. The Director concerned brought the matter before Palmers Board, but Palmer immediately opposed it and the offer was rejected.

Lady Hutt seems to have been determined to squeeze the highest possible price out of Palmer and Bowes by fair means or otherwise, and when Palmers Board rejected her offer she lost patience. As Palmer had still not replied to her offer when the time limit she had set expired on 21st April, her solicitors gave notice to Palmer and Bowes that they intended to make an application to the Court of Chancery for the dissolution of the firm and the sale of Hutt's share through the Court.

Western on 4th May regarded this as Lady Hutt's strongest bluff

(1) The details of her offer have not survived.

yet, and subsequent events would seem to suggest he was right; but the balanced view was completely upset by an interview he, Palmer and Cooper, the firm's solicitor, had with Hargrove, Lady Hutt's solicitor, on the following day. Hargrove claimed to be unable to control Lady Hutt, admitted that the course she was following was suicidal, and then intimated that she might be willing to come to terms if a better offer was made. Cooper, with Palmer's authorisation, immediately offered £120,000 payable over five years, but this Lady Hutt also rejected. Palmer was thus compelled to raise his offer, and on 28th May Lady Hutt signed an agreement giving her £150,000, payable over six years, dating from 1st January 1883.

Thus Bowes and Palmer were now joint Partners, and to confirm this a new Partnership Deed was drawn up in the summer of 1883, under which it seems that Bowes held rather more than half of the shares; Palmer continued as Managing Partner. In October 1883 the two men also concluded a financial agreement very favourable to Palmer, under which most of Palmer's debt was transferred into promissory notes, shares in Palmers Shipbuilding & Iron Co and the Bede Chemical Co. (1) or remitted by Bowes as a gift to Palmer.

But the firm's financial position was still critical, and in April 1885 it was unable to meet one of the instalments due to Lady Hutt (2). Yet 1884 would seem to have been their best year to date.

(1) Another firm in which Palmer had an interest.

(2) As with the purchase of Wood's share, it was the firm, rather than the individual Partners, who paid, though quite why is not clear.

The Durham collieries raised over $1\frac{1}{2}$ million tons, and if the Northumberland output be added at an assumed total of 220,000 tons, it is possible that in 1884 the Partners were the largest single producer of coal in the whole of North-East England, with an output of over $1\frac{3}{4}$ million tons. Their only serious competitor was the Earl of Durham, whose collieries raised 1,773,000 tons. In the same year nearly 190,000 tons of coke were manufactured, making the firm the sixth largest producer in the North-East, with well over 900 ovens. Furthermore, prices were at last beginning to rise very slowly. On the other hand, the Partners had a large wage bill, for in County Durham alone in 1885 they employed 4,433 people, and if the Northumberland collieries were added the total would probably rise by over another thousand. Furthermore, on 2nd March 1885 there was a serious explosion in the West Pit at Usworth, by which 42 people were killed, the worst disaster in the firm's history. A considerable amount of money had to be spent to bring the Pit back into production.

At this point the Earl of Strathmore and his eldest son, Lord Glamis, were approached with a view to helping the firm through its financial troubles. Whether this suggestion came from Bowes is not known; it was done without Palmer's knowledge. It was pointed out that since the firm were the largest lessees of Bowes' estates in County Durham, and those estates would return to the Earl of Strathmore at Bowes' death, it would be to everyone's advantage if the Earl and his son assumed some financial responsibility for the firm, even to the extent of becoming Partners. Lord Strathmore was not averse to the

idea, but wished to know a great deal more about the firm and its prospects. As a result Lord Strathmore's solicitor, G. A. Jamieson of Edinburgh, and Bowes' London solicitor, E. Y. Western, were commissioned to prepare a memorandum. Palmer was to be informed, but was not to receive a copy of the memorandum.

The result, put before Lord Strathmore, Lord Glamis and John Bowes in May 1885, was a very perceptive document. It reveals that the total capital sunk in the firm was not more than £12,000, and that the firm's profits up to the end of December 1884 totalled £1,963,753, of which £767,000 had been drawn by the Partners in dividends and the rest had been put back into the firm. Hutt had done very well out of the firm, as the money which he had put into it had originally been lent to him for the purpose by Bowes! The profits in the last five years had been £164,515, though no dividend had been paid since 1882. Having assessed Palmer's character and his part in the firm's history - his debt had now fallen to just under £9,000 - the firm's liabilities are given as £399,975 - 7 - 3d, with another £15,000 still owing under the Felling agreement, while its assets, exclusive of the value of the collieries and the ovens, were only £86,307 - 19 - 3d. The whole position was summed up as follows:

"..... Consequently... the firm has during the whole of its existence in the main subsisted upon the credit in which it has always stood. The result has been that the firm has latterly been carrying on a gigantic business upon credit with insufficient capital. This credit has been maintained primarily by the popular belief that Mr. Bowes was an

exceedingly rich man and by the known fact that Mr. Palmer was undoubtedly an able man of business." (1)

The memorandum reviewed the firm's prospects very favourably, and said that it was to the Earl's advantage that the firm be prevented from going bankrupt, and that Palmer's connection with the firm was beneficial, provided a closer check were kept upon him. It recommended that the firm should be turned into a limited liability company as soon as possible, and that the Earl and Lord Glamis should become substantial share-holders. In conclusion, it expressed

"..... deep concern at the position in which it is evident that Mr. Bowes has been placed in relation to this enterprise; it is evident it has been sustained throughout mainly by his credit, and while those associated with him have derived in the past great profit from the undertaking to which their contributions were inconsiderable, it now happens that Mr. Bowes finds himself the owner of half of an enormous enterprise which he cannot be expected to personally conduct or control, and liable for vast sums which, however great may be the value of the assets they represent, could not be met from the resources of the concern itself, and may therefore at any moment become a matter of serious embarrassment to Mr. Bowes himself." (2)

Changes in the firm's affairs were now unavoidable and urgent; but all the plans were soon to be upset again. The memorandum was sent to Bowes in France, where he was ill. Diagnosing his illness as dropsy, his doctors advised him to return to England, hoping that the change of climate would benefit him. He managed to make the journey

(1) Strathmore MSS, Box 8, Durham County Record Office: memorandum to Lord Strathmore, Lord Glamis and John Bowes, May 1885, 27 and 35.

(2) *ibid.*, 42.

in the summer, but the change did not produce the hoped-for result, and on 9th October 1885, at Streatlam, he died. He was 74.

John Bowes' contribution to the development of the firm can scarcely be calculated. His was the inspiration behind its foundation; his the wealth which facilitated its expansion and sustained its credit in days of depression. The large royalties which he owned placed the firm in a very favourable position with regard to leases and rent, and the share which he possessed in the older firm of Lord Ravensworth & Partners gave Palmer the opportunity to build up one of the great firms in the English coal industry. The firm could only regret that being a coal-owner was only one part of his varied life, that his other interests made heavy demands on his time and money, and that above all his shyness made him prefer to live in France and exert his able influence by letters and agents rather than in person. A kind-hearted, generous man with a sharp sense of humour, his epitaph is perhaps best expressed in his own words, written two years before his death:

"..... I can confidently say that at all times I have acted (as was most natural for me to do) in the interest of the Firm, and I feel convinced that you and others will some day see that such was the case." (1)

(1) Strathmore MSS, Box 6, Durham County Record Office: copy (in Bowes' hand) of letter to Lady Hutt, 17th January 1883.

CHAPTER 5.

THE YEARS OF RE-ORGANISATION : 1886 - 1914.

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Under his will Bowes directed his executors (or Trustees as he termed them) to carry on the firm's business, but to turn it into a limited company if they saw fit. The residuary estate returned to the Earl of Strathmore. But it will be remembered that in 1869 Bowes and his first wife had founded the "John and Josephine Bowes Museum and Park" at Barnard Castle, the building of which had continued slowly until 1882, when it was halted for lack of money. In Bowes' will the Trustees of the Museum were left £135,000 to complete the work and furnish it with the numerous pictures and china which Bowes also bequeathed to them. It was obvious that neither this nor any of the other legacies would be paid unless the colliery business were sold or sufficient profits made from it, for the estate was still liable for its share of the firm's debts, and these would have to be paid first.

In this position the men Bowes had named as his executors were of great importance. The first was the historian and politician A.W. Kinglake, who was 76; the second was Sir Henry Morgan Vane, the Secretary to the Charity Commissioners since 1853, who was a year older than Kinglake, and the last was Edward Young Western, his London solicitor. Thus it was likely that Western would outlive the others. Such proved to be the case, with the result that the administration of Bowes' estate passed into Western's sole control.

The estate was at once placed in Chancery and discussions begun

with Palmer to work out the future of the firm. Although there was only one possible course to take if the firm was to continue, that is, to become a limited company, Palmer seems to have been reluctant to face this, but he had no choice. On 21st July 1886 the firm became a limited liability company with the style of "John Bowes & Partners Ltd." The new company absorbed both the Marley Hill Coking Company and the Northumberland & Durham Coal Company. The nominal capital was £600,000, of which at least half was held by the Bowes estate. The published names of the subscribers, holding one share each, were Palmer, his son Alfred (1), E. Y. Western and his brother George, J. V. Gregory and G. A. Jamieson. In fact, besides the shares held by the estate, Western held 15,000 shares on his own account and a further 5,000 jointly with Palmer, who already held 10,000. Each share had a nominal value of £10. Thus Western, as the estate's Trustee and the largest of the other shareholders, held the controlling interest as long as estate remained in Chancery, although there is no evidence that he took part in any day-to-day management.

On 26th July 1886 Palmer made over his share in the firm to the new Company, and was appointed Chairman and Managing Director for life at a salary of £3,000 per annum, and he was also to be entitled to one fourth of the net profits after payment of debenture interest,

(1) Alfred Molyneux Palmer (1853 - 1935) had joined the firm in 1872. He also seems to have been the manager of the ill-starred Tyne Glass Works.

though this commission was to cease on 1st July 1896 or when the aggregate of the sum should have reached £100,000. Palmer had made a very good bargain for himself, and his success was crowned later in the year when he was raised to the Baronetcy for a lifetime of service to British industry.

The new Company started very well, with of course Palmer, Gregory (1) and Cuthbert Berkley (2) still in control, but with a much closer check on management than had ever existed before. In both 1886 and 1887 the Company was almost certainly the largest producer of coal in the North-East (3). In addition, they gained a greater share of the market, their percentage of the total output from the coal-field rising from 4.43% in 1885 (4) to their highest-ever figure of 5.49% in 1887. Coke production also rose. In 1885 the Partners had made 174,235 tons, 271 of their 924 ovens being out of use; in 1888 the output rose to the highest-ever figure of 261,854 tons, only 32 ovens being out of use, and in the following year only 14 ovens were out, though slightly less coke was produced. Again this was a real increase resulting from a greater share of the market, for of the firms with a higher production in 1885, only Pease & Partners

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- (1) Now the Company's Secretary.
 - (2) Now the Company's Chief Viewer.
 - (3) A final decision cannot be given in the absence of exact figures for the Northumberland Collieries.
 - (4) This figure was, however, lower than normal because of the Usworth explosion.

showed a comparable increase: Strakers & Love and the Weardale Iron Company showed a very slight increase, and Bell Brothers, Bolckow Vaughan and Consett Iron Company all showed a decline. This development did not result from higher prices; indeed, in June 1888 the average selling price of all Durham coal fell to 4/3.91d per ton, its lowest level since October 1879, though it did rise thereafter to 7/5.62d per ton in September 1890 (1).

But all was not as plain sailing as might have been wished. With Western making no move to pay the legacies under Bowes' will, notably the £135,000 due to the Bowes Museum, the people in Barnard Castle became increasingly exasperated, the more so when Colonel William Wilson, a local solicitor, saw Western, only to be told that he (Western) "found it so difficult to give any accurate information on the subject that he had made up his mind to decline giving any at all." (2). It was well known that the payment of the legacies depended on John Bowes & Partners Ltd. making a profit, though it was by no means so well known that the firm had large debts to meet first. The first attack was launched at a meeting of the Barnard Castle Board of Health on 21st February 1890. At this R. J. Dent, Bowes' former land agent at Streatlam and Gibside, claimed that the Company must be making a handsome profit, as gas coal, which two years earlier had been

(1) Accountants' Certificates of the Durham Coal Owners Association, Vol. I, Durham Record Office.

(2) Account in issue of Teesdale Mercury, 26th February 1890.

selling at 6/- per ton was now selling at 15/- per ton (1), giving an income which Dent estimated at £1,200,000 per annum. But instead, it was claimed, of these profits being used to pay creditors and legatees, the Company, or rather Western, was using them to build 50 additional coke ovens at Burnopfield Colliery and more workmen's cottages, or to put it another way, to increase the value of the residuary estate, under which the Museum had no claim.

There seems little doubt as to Western's tactics during this period, though in fairness to him we have only one side of the story in addition to what he chose to publish. Circumstances had suddenly placed considerable wealth in his power and he had the opportunity to benefit greatly if the Company could be held together and made a profit. As the new company had been doing quite well since 1886, despite low prices, it can reasonably be expected that Western, as a substantial share-holder, was obtaining considerable benefit. He therefore wished to play for time with regard to paying the legacies, for at the outset the only way in which this could be done was to sell some of the collieries, and this in the midst of a depression; the only other possibility was for the Bowes estate to sell some of its shares in the Company, which he also wished to avoid, as only a low price would be obtained, it would introduce other people into the Company, and possibly into the Directorship, and would also reduce the

(1) In view of the prices given in the Accountants' Certificates of the Durham Coal Owners Association, these figures would seem to be exaggerated.

number of shares under his control.

With prices now rising, it was argued that colliery property could be sold at a profit, and in an attempt to compel Western to do this, a public meeting was called at Barnard Castle on 2nd May 1890. Watson, who was Chairman of the meeting, had meanwhile been converted to Western's point of view, and said that if the property were forced into the market it would only fetch low prices, and the legatees would have no hope of being paid in full. He then quoted a letter to one of his clients from the firm to show that a profit was being made and that the firm was eager to pay off its debts, implying that the time was not far off when the legatees could hope to receive something.

Unfortunately, the next speaker was a young man called J. Ingram Dawson, another solicitor, who had been conducting some research into the Bowes estate and the position of the Company. He announced that the cash profit balances of the Company then lodged with the Bank of England were rather more than half a million pounds, and that there was no justification for not paying either debts or legacies. Dawson recalled the event nearly fifty years later:

"..... My revelation created an extraordinary effect - I had nearly written consternation - in some quarters. So much so, I was approached under cover of urgent confidential conversations to withdraw what I had disclosed as not being the fact, and say I had been misled. The reason for this approach was not then given, nor is it necessary now to give it. But the reward to myself for so doing was to be a

position and with prospects which had never entered my mind, from a monetary and social point of view. I refused." (1)

Dawson's word is uncorroborated; but if Western - for it can only have been he - did try to bribe him, it shows the extremes to which he was prepared to go in an attempt to maintain the status quo.

The next move came neither from Dawson or Western, but from Dent, who in the early months of 1891 tried to obtain support for an application to Chancery asking for the realisation of the shares held by the Bowes estate in the Company. This came to nothing, however, and for a time the attack on Western was confined to periodical protests from the Barnard Castle Board of Health (subsequently the Barnard Castle Urban District Council) and a prolonged war by correspondence between Western and Dent in the columns of the "Teesdale Mercury".

Meanwhile the Company continued to prosper. In 1890 Dunston Colliery was re-opened after fourteen years of idleness, and it is probable, allowing for the uncertainty of the Northumberland figures, that in 1891 the Company raised over 2,000,000 tons of coal for the first time. Of this, nearly half was gas coal, produced mainly from Springwell, Wardley, Usworth and Felling Collieries, showing very well how this trade had superceded the coking coal trade, which had once formed the basis of the firm's greatness.

(1) DAWSON, J. I. Reminiscences of a Rascally Lawyer. Kendal: Wilson, 1949, p. 21. (The "rascally lawyer" was Dawson himself, not Western).

But industrial trouble was looming ahead. At the beginning of 1891 the Coal Owners Association had agreed to an increase in wages of 5%, expecting that prices would rise during the year. In fact, after the average price had risen steadily since June 1888 to 7/5.62d in September 1890 it began to fall once more. During 1891 the fall was about 5%, and in November the owners gave notice that they would seek a reduction in wages of 10%. In Durham wages had risen by 32 $\frac{1}{2}$ % between November 1888 and December 1890 (1), and in view of the fall in prices the owners felt that 10% was the bare minimum for which they could ask. While this was still being considered by the workmen's Federation Board (2), the owners put forward three suggestions - (a) a reduction of 10%, or (b) that the matter should be referred to independent arbitration, or (c) that the Federation Board should negotiate with the owners' wages committee and come to an agreement binding on both sides. The Board would have preferred the last, but they had no power to act thus, and a vote among the workmen refused to give it to them. The owners then made a new offer of an immediate 7 $\frac{1}{2}$ % reduction or 5% in January 1892 and 5% in May. While this was still under consideration the men took matters into their own hands, and on 27th February 1892 most of them gave notice.

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- (1) WILSON, J. A History of the Durham Miners' Association. Durham: Veitch, 1907, p. 356.
- (2) The Federation Board was a negotiating body set up by the Durham Miners Association to combine the efforts of miners, engineers, mechanics and cokemen.

They voted heavily in favour of a strike rather than accept the owners' terms, and so when the notices expired on 12th March a general strike began.

It was a bitter strike, with many reports of workmen who wished to work being intimidated and damage being done to both their property and at the collieries themselves, so that the police had to be called in to give protection. The Company seems to have suffered rather less than most, for although nearly 5,500 of their men struck, there was hardly any trouble. Furthermore, with the exception of Marley Hill and Andrews House Collieries, where there was a danger that parts of the workings would be flooded, the collieries themselves suffered little by receiving no attention, though there was an increasing fear that roof falls would occur unless something was done.

When the strike had been in progress for two months the Board tried to open negotiations with the Coal Owners Association, only to be told that the latter now demanded a reduction of $13\frac{1}{2}\%$, the addition being to cover the expenses and loss of the strike. This was, of course, turned down by the Board, and after the latter had received power to act for the men, it offered to accept a reduction of $7\frac{1}{2}\%$, which was in turn refused. Ten days later, on 23rd May, the Board offered to accept the 10% originally asked for, but this too was refused. At this point the Bishop stepped in as mediator, and on 3rd June the owners gave way and accepted the Board's offer. The strike had lasted nearly three months.

The strike completely disrupted production and trade, and it was

some time before matters returned to normal. The Company estimated that it cost them £12,566 merely to pay officials' wages during the strike and to re-open the pits; the additional loss in terms of production and unfulfilled contracts must have been very high. But despite the length of the strike the Company's production figure for 1892 was only just over 300,000 tons lower than that for 1891.

The various returns of the Durham Coal Owners Association dealing with the strike reveal some interesting information about the firm. The most noteworthy fact is that the firm had to some extent lagged behind in the general modernisation of collieries in the county. Two collieries, Springwell and Wardley, were still being ventilated by means of a furnace at the bottom of the upcast shaft, while at Kibblesworth it would seem that a horse gin was still being used for winding. Another interesting point is that the output per man per day was 2.11 tons in the western collieries but only 1.8 tons in the east, both of these figures showing a decline between 1890 and 1892.

Despite the fall in prices, output continued at a high level. In 1894 the Company again passed 2,000,000 tons, and although Dipton Colliery and its coke ovens were closed at the end of that year, in 1896 the Company achieved its highest-ever output, raising 2,114,283 tons, a total only exceeded by the Earl of Durham's collieries.

On 31st December 1895 Palmer, now 73, retired as the Company's Chairman and Managing Director, on completing fifty years service with the firm. His loyalty to it is well shown by the fact that he had

retired two years before from Palmers Shipbuilding & Iron Co. Ltd., in connection with which he is infinitely better known. He had taken full advantage of the opportunities which the Partnership had offered him in 1845, and his energy, skill and ability made the Partners one of the great names in the Durham coal industry. Obversely, the success, power and money of the Partnership raised Palmer from obscurity into one of the great Victorian industrialists, and provided the basis on which he built up his empire. He was to live on until 1907, when on 4th June, at the age of 84, he died. He was succeeded as Managing Director by his second son, Alfred Palmer, now aged 42.

The last ten years of Sir Charles' rule, from 1886 to 1895, were undoubtedly the peak of the firm's greatness, and certainly the most stable. Moreover, prices began to rise again at the end of 1896, and coupled with a slow but steady rise in the demand both for coal and coke, Palmer could have been forgiven for thinking that in the years following his retirement he could expect to see the Company go on from strength to strength. Instead, he was to see a fairly substantial decline.

For the problem of paying the legacies under Bowes' will still remained. At the beginning of 1895 Western tried to bring about a different solution from those already discussed, that of introducing one or more new "Partners", or Directors, who would be prepared to invest money in the Company, so that he could use the money received from them for their shares to pay the legacies, but this came to nothing. The Court of Chancery had allowed him to carry on the works

of the Company insofar as they concerned the estate until 1st August 1896, and although he seems to have obtained an extension of time, a final settlement could not be delayed indefinitely.

Exactly what was said and argued among the Directors in the months following Palmer's retirement is not known; but the results of their deliberations may be seen, and conclusions drawn. It would seem that rather than let the Bowes estate sell some of the shares held in the Company, which would have meant bringing in men with no previous connection with it, they decided that some of the collieries would have to be sold, allowing the estate to use the money which it would receive from this to pay its debts, while the Company could use its share to modernise and develop the property which it still possessed.

The next problem was which collieries to sell. The bulk of the Company's property was in County Durham, and thus the two remaining Northumberland collieries were an obvious choice to put on to the market. Moreover, the Durham collieries were centred round the Pontop & Jarrow Railway with the exception of Pontop, Usworth, Felling and Dunston, and so it might be that among these further sales could be made. In these considerations it would appear that greater importance was placed on leaving the Company with a more compact and more easily-administered final unit than to maintaining the Company's position in any one field of the coal trade. It will be remembered that in 1891 the Company's greatest interest lay in the gas coal trade, this accounting for nearly half of its output - yet it was a gas coal colliery which they decided to sell first, and one whose purchase only

fourteen years previously had been considered of the utmost importance to the firm's position in North-East Durham - Usworth Colliery.

In some respects Usworth had not proved as beneficial as had been hoped. The output of 320,000 tons achieved in 1881, the year before it passed to the Partners, had not been achieved since, though 290,000 tons had been raised in 1896. The explosion there in 1885 had cost a great deal of money, and although the colliery did enable the Company to work the coal from the Hylton Royalty without the expense of a new winning, Usworth lay some way from the royalty, so that the working expenses involved in working Hylton coal were probably quite high. Thus it was decided to sell both the colliery and the royalty.

At this point events are not too clear. To purchase the colliery a new company with the title "Jonassohn, Gordon & Co. Ltd." was formed. As far as is known, neither the Company nor any of its Directors had any share in this company, which would appear to have contained in Jonassohn one of the men from whom the Partners had originally purchased the colliery. In 1897 the new company took over the colliery, but the exact date has not come to light. The Hylton Royalty was sold to the Wearmouth Coal Co. Ltd., who owned the adjacent royalty to the east on which Wearmouth Colliery was sunk. They at once took the step from which the Partners had so long refrained and made a sinking on it. Hylton Colliery came into production in 1900 and by 1903 was raising nearly 350,000 tons per annum - an example of what might have been.

With Usworth gone, the Company turned its attention to the Northumberland collieries of Seaton Burn and Dinnington. Both were steam coal collieries, and were administered from an office at Killingworth. They lay about six miles north of Newcastle, and were served by one of the largest industrial railway systems in Northumberland. After the Brunton & Shields Railway had been purchased in 1872 it was linked to the Killingworth Railway, and this gave the Partners two staithes on the Tyne - at Wallsend for Killingworth and at Percy Main for Seaton Burn and Dinnington. In 1892 the Company had greatly extended this system when they constructed a connecting line between Dinnington Colliery and Gosforth, part of it over a section of the Brunton & Shields Railway which had been derelict for many years. At Gosforth it was connected to the Coxlodge waggonway, first opened in 1808, and this continued to staithes on the Tyne at Walker. Why the Company should have felt the need for three staithes for their two collieries and Burradon Colliery (1) is not clear. There were two links between the Brunton & Shields line and the Killingworth line, one near Burradon and one at Longbenton, the latter remaining open after Killingworth Colliery had closed in 1882, and this can only mean that Seaton Burn and Dinnington coal was shipped at Killingworth Staithes as well as at Percy Main; after 1892 coal from Dinnington presumably went down to Walker, though neither of the other staithes were abandoned; possibly coal from other companies was handled there, as it was at Jarrow.

(1) Owned by the Burradon & Coxlodge Coal Company and served by the Brunton & Shields Railway.

When it was known that the Company were intending to sell Seaton Burn and Dinnington a group of men met to try to raise sufficient capital to buy them. The result was the "Seaton Burn Coal Syndicate", formed on 10th November 1898 with a capital of £100,000 in £10 shares, all of which were taken up, some by women. The Direction of the Syndicate was vested in three men - Walter Scott, a coal-owner with three collieries in East Durham; Henry Armstrong, a mining engineer whose principal appointment at this time was as Chief Viewer to Lord Dunsany & Partners, the owners of Pelton Fell Colliery, near Chester-le-Street; and George Boyd, a Newcastle solicitor. Here too the Company had no connection with the intending purchasers.

With the Syndicate now formed, negotiations began for the sale of the two collieries, which in 1898 had raised 374,779 tons, and on 6th January 1899 an agreement was signed under which the Company was to receive £82,000 excluding the value of the stock. This latter was put at £36,500, though this figure did not apparently include stores worth £5,440. Thus the final figure was in the region of £120,000.

The Syndicate took possession on 8th January 1899. Four months later the "Seaton Burn Coal Co. Ltd." was incorporated, containing some, if not all, of the members of the Syndicate. To this new company the Syndicate sold the collieries for £102,000 on 24th June. By this date £72,000 had already been paid to John Bowes & Partners, and the remainder was paid by the end of the year. The final agreements between the Company, the Syndicate and the Seaton Burn Coal Company were signed on 30th December 1899.

Almost simultaneously with the negotiations with the Seaton Burn Coal Syndicate the Company was also negotiating for the sale of Dunston Colliery and the derelict Norwood Colliery (1). Since Dunston had been re-opened in 1890 its output had risen steadily, and in both 1897 and 1898 over 150,000 tons was raised. Here the prospective purchaser was the Swalwell Garesfield Coal Company, a very small company owning only one colliery, Swalwell Garesfield, at Swalwell, just over a mile upstream from Dunston on the Tyne, and so the two collieries could be worked together. The company's managing director appears to have been a P. H. Brutton, about whom little is known. The colliery's new owners took possession on 9th July 1899, but the price which they paid has not come to light. This company too did well out of the transaction, for in 1900 it re-opened Norwood Colliery, which was soon raising a considerable tonnage.

These sales produced the money which the Bowes estate and the Company needed. The Trustees of the Bowes Museum received £50,000 from Western in April 1900 and a further £34,500 in 1901, and although Western subsequently filed an affidavit claiming that the Museum was only entitled to another £40,700, the Master of the Court of Chancery decided that the amount still due was £105,319. The final balance was paid in July 1905, and the Museum then passed out of the history of the Company.

As a result of these sales the Company gave up its interest in the steam coal trade, and also became an entirely Durham-based concern.

(1) It had been closed since 1875.

The firm never seems to have paid as much attention to its Northumberland property as it did to its Durham collieries and ovens - very few steam coal contracts are mentioned in the letters from Palmer and Gregory to Bowes. On the other hand, the sale of Usworth and Dunston considerably reduced the Company's capacity to meet the growing demand for gas coal, now being stimulated by the wider use of gas for cooking and heating.

But of the collieries remaining, only Felling and Pontop were not connected to the Pontop and Jarrow Railway; Felling had its own staithes, and coal from Pontop was carried by the North Eastern Railway either to Jarrow or to Tyne Dock for shipment, so this disadvantage (if it was such) was small. It meant, however, that the majority of the collieries still owned by the Company formed a compact unit, even if that unit was fifteen miles long from one end to the other. The Company now possessed six coking collieries in Marley Hill, Andrews House, Byer Moor, Burnopfield, Dipton and Pontop, and four gas coal collieries in Kibblesworth, Springwell, Wardley and Felling. With the re-organisation completed, the Company's task was to modernise and develop its resources to meet the demand for coking and gas coal.

This development began at once. In 1900 Dipton Colliery, which had been closed since 1894, was re-opened and its 62 coke ovens lit up once more. Then in 1901 the Company opened up Mount Moor Colliery, or the "Vale Pit", as it was now known, which had lain idle for many years. This lay at the top of the Black Fell Incline on the Pontop & Jarrow Railway, so that its re-opening added to the difficulties

of operating the six consecutive inclines on the Railway, but its output steadily increased, and in 1907 this had reached 125,000 tons. With these two collieries back in production, the Company's output rose from 1,455,000 tons in 1899 to 1,642,000 tons in 1906, though this increase was not so striking as that achieved by Bolckow Vaughan, the Consett Iron Company or Pease & Partners.

The coking side of the Company's business presents a rather different picture. In general during the 1890's the output of coke from the coal-field rose. The complete figures are not known, but the output from members of the Durham Coal Owners Association rose from 2,938,000 tons in 1892 to 5,293,000 tons in 1900, and though it declined after this it remained above $4\frac{1}{2}$ million tons per year, and some companies, notably Bolckow Vaughan, the Consett Iron Company and Priestman Collieries, recorded quite striking increases (1). After falling to 123,680 tons in 1895 the Company's production rose to 228,387 tons in 1899, when 681 ovens were at work and only 152 out of work (2). But thereafter there was a steady decline, and for no apparent reason. The Dipton ovens, which had been re-lit in the summer of 1900 were put out again in the spring of 1902, and the 107 ovens at Burnopfield ceased production in October 1904; neither sets were ever to be lit again. By 1904 well over half of the Company's

(1) See Appendix F.

(2) Of the 152 out of work, 62 were at Dipton, and some of the others would have been under repair.

ovens were out of use, and by 1907 only 300 were at work, with over 500 idle. Nor did the Company make any move towards building any bye-product ovens, of which the first examples in Durham had been erected by Pease & Partners at Crook in 1882. Most of the large coke-producing firms, and some of the smaller firms too, had built some by 1905, even if they still had bee-hive ovens in operation. Yet curiously, while not building any bye-product ovens and suffering a rapid decline, the Company was still building new ovens - not of the standard bee-hive type, but an unusual 10ft square oven, of which no examples are known elsewhere in the county. This seems to have been a development of the Company's 10ft x 8ft ovens at Crookbank, and apparently they were filled and emptied by means of belts. The first of these 10ft square ovens was built at Pontop in 1896, and the last three, giving a total of sixty, in 1903-1904. It would seem that during this period the Company adopted a deliberate policy of running down the coking side of its affairs, a far cry from the days when the Partners began in business.

The years following the turn of the century saw the retirement (or death?) of two long-serving members of the firm. The first was Cuthbert Berkley, who since 1863 had been the Partners' Chief Viewer. With his departure in 1901 this post was abolished. His son, R. W. Berkley, took over the general superintendence of the coking collieries, but Robert Mitchison had special responsibility for Dipton and Pontop; while in the east R. B. Clark took over Springwell, the Vale Pit and

Wardley, W. S. Harris controlled Kibblesworth and Claude Bowes Palmer (1) Felling (he had previously also had Dunston).

Three years later saw the departure of John V. Gregory, whose length of service with the firm probably stretched over sixty years. He had seen the firm in good days and bad, and probably knew more about the firm's affairs than even the Partners themselves did. His letters give the impression of a quiet yet efficient man, an ideal company secretary. Latterly he had also been a Director, and from at least 1899 there had been two Secretaries, a man named Thomas Robinson being the second. He took over as Secretary on Gregory's departure, but his main concern seems to have been the fitting side of the Company's affairs; Henry Armstrong, who first entered the Company's history in the sale of the Northumberland collieries, and who had now become a Director, looked after more general business.

With the death of Palmer in 1907 the first generation of the Company passed away. Palmer's baronetcy passed to his eldest son George, and on his death in 1910, it passed to Alfred Palmer, who was still the Company's Managing Director.

The period between 1900 and 1913 was one of rising production generally in the Durham coal-field. It saw the final exploitation of the concealed eastern part of the coal-field, and new sinkings were made in nearly all the places not already being worked. In this the

(1) C. B. Palmer (1868 - 1949) was Palmer's third son and Bowes' god-child. He left the Company to join the Army in 1914.

Company was not left behind. We have already seen that Dipton Colliery was re-opened in 1900, followed by the Vale Pit a year later. The Company now began to take a close look at the property which it owned in County Durham, and made plans to expand its workings wherever it could.

The Company's first move did not, however, increase its productive capacity. It will be remembered that under the terms of their lease from the Ecclesiastical Commissioners the Company were required to instal a large pumping engine to drain both Felling and other collieries nearby. The Company do not appear to have been in a hurry to fulfil this obligation, and nothing was done until 1902. In this year the Company acquired the disused Tyne Main Colliery (otherwise known as the Old Fold Pit), which lay on the bank of the Tyne west of Felling, and this was then equipped as the pumping station required.

In addition to re-opening the Vale Pit the Company also began sinking Springwell Colliery deeper, and in 1902 the Beaumont seam was proved there at 150 fathoms. This was 5ft 11in thick, and with the Vale Pit meant that the Company's prospects on the east side of the Team Valley were very good; for some time here the output exceeded 350,000 tons per year.

The Company next turned its attention to the western end of the Pontop & Jarrow Railway. As we have seen, Dipton Colliery worked only intermittently during the nineteenth century. The Partners were not the sole lessees of the royalties in the Dipton and Pontop area;

indeed, until 1890 there was a second colliery at Dipton itself, known as the Lily Pit and owned by Robert Dickinson & Company, which worked the upper seams, the Partners working the lower seams; while in other parts of the area, which was entirely owned by the Ecclesiastical Commissioners, certain sections, and even individual seams, were shared by no fewer than five separate companies (1).

In 1904 the Company took a careful assessment of its holdings in the area, and came to the conclusion that the coal then being worked to Dipton Colliery would not last more than five years, and indeed, the output from Dipton was steadily declining. If the colliery was to continue a new shaft would have to be sunk to the Busty seam at an estimated cost of £35,000, but as additional workmen's cottages would be needed the total cost was put at £65,000. As the Company's main lease expired in 1926 it was not prepared to lay out such a large sum unless a new lease was granted. This was done, and in 1909 the sinking began of what became known as Dipton New Colliery. This lay about 300 yards north of the Delight Colliery, and came into production during 1913.

At the same time that a new colliery was under consideration at Dipton the Company was also surveying the eastern end of the Railway. The source of attention here was the North Follonsby Royalty, and in

(1) The South Derwent Coal Co. Ltd., the South Pontop Coal Co (or U. A. Ritson & Sons Ltd.), the East Pontop Coal Co. Ltd., the Consett Iron Co. Ltd. and John Bowes & Partners Ltd., the last two being the largest lessees.

1906 it was decided to sink a new colliery here, about a mile south-east of Wardley Colliery. The sinking of the new shaft necessitated the construction of a branch about $\frac{3}{4}$ mile long from the Railway. The Company seem to have been in no hurry to proceed with matters: the branch was not completed until 1908, and the number of people working on the new winning actually declined after 1909. The new colliery was virtually ready to begin production when the Company decided to close Wardley Colliery, and this was done on 31st December 1911. It is not known whether the Company intended from the first that Follonsby Colliery should supercede Wardley; but its closure caused ill-feeling among the men. For Follonsby remained closed until June 1912; and under the terms of the wages agreement, if the 800 men previously employed at Wardley were re-engaged within six months the Company was obliged to pay the former scale of wages, but if not the scale did not apply, and when Follonsby did eventually open the men were compelled to accept lower wages or continue unemployed - not an affair from which the Company emerges with credit. As with all new collieries, it took several years for Follonsby to come into full production, and even in 1914 the coal raised there was only 146,808 tons, about 35,000 tons per year less than Wardley had averaged before its closure.

Having carried out considerable development at both ends of the Railway and also on the eastern side of the Team Valley, the Company now turned its attention to the western side of the Team Valley. There were known to be large reserves of coal at Kibblesworth, but the Robert Pit shaft was only 12ft in diameter, and this hampered attempts to increase

output. The ultimate solution, as at Dipton, was to sink a new shaft of much larger diameter to the lower seams, but as it was committed to considerable expense elsewhere the Company obviously felt unable to do this immediately. Instead it was decided to construct a "drift mine", or a horizontal shaft into a seam. This was a much cheaper mode of working than a vertical shaft colliery as maintenance and underground costs were less, though of course output was fairly low as only one seam was being worked. A site was chosen about 150 yards down the Kibblesworth Incline, and Kibblesworth Grange Drift, the first drift to be worked as a separate concern from a colliery, commenced production on 1st January 1915.

The coking side of the Company's affairs declined steadily until 1906, when only 116,279 tons were produced, a very small share of the 5,305,000 tons made by the coking members of the Durham Coal Owners Association, the highest total yet recorded in their records. Then at long last the Company decided to construct some bye-product ovens, and a contract was placed for a battery of sixty Huessner ovens to be built at Marley Hill. The choice of the Huessner oven is interesting, as it was one of the older types of bye-product oven, and none had previously been built in the county, firms much preferring the Otto Hilgenstock and (latterly) the Koppers oven. The Huessner ovens came into production in July 1908, and were capable of producing about 7,000 tons of coke per month. At the beginning of 1908 only 92 beehive ovens were still in use at Marley Hill, and the last of these were put out at the beginning of October 1908. The remaining beehives - at

Pontop and Byermoor - were not slow to follow. Latterly about 50 ovens were in use at Pontop, and the last of these was put out in July 1909. The number in production at Byermoor actually rose from 52 in 1909 to 103 in 1910, but during 1911 these were gradually closed down, and the last ceased production in September 1911, thus ending the Company's stake in beehive oven coke, which seventy years before had formed the basis of the Partners' greatness. Many of the beehive ovens were just left as they were, and when the First World War broke out the Company perhaps had cause to regret its withdrawal from this trade. An urgent circular from the Government in December 1916 asking what idle coking capacity could be enlisted to aid the war effort reveals that at that date the Company still possessed 379 beehive ovens, though only 156 of them, all at Byermoor, were considered worth repairing, and the Company's reply indicates quite clearly that it felt coke from these ovens could only be made at a loss and it had no wish to re-commence production.

Despite the new ovens the Company's output continued to decline. In 1908 it fell below 100,000 tons, and in 1912 it was only 75,577 tons, though it rose slightly thereafter. The Company's position seems ambiguous; they were raising a large quantity of coking coal, yet they appear to have been unable to decide whether to withdraw from the coking trade altogether and sell the coal to others or to invest more money in coking and try to re-establish their position in the trade, which still continued at a high level.

With so much capital investment involved it was essential to the

Company's prosperity that the Pontop & Jarrow Railway should run efficiently; the North Eastern Railway's Tanfield branch could not handle all the traffic from the western collieries if the Railway were to suffer a serious breakdown, while Kibblesworth, the Vale Pit and Springwell had no other outlet but the Railway for their coal.

The first improvement came in 1900, when the incline between Burnopfield Colliery and Crookgate was discontinued and locomotives allowed to work over it, subject to certain restrictions. This cut out a notorious bottle-neck between two locomotive-worked sections, thus greatly facilitating the flow of traffic on the western section. Then between 1901 and 1914 three new locomotives and one second-hand locomotive were added to stock, while a further new engine was ordered at the end of 1914, giving the Railway fourteen locomotives with one on order at this date. In addition, at least nine of those locomotives received new boilers during this period, so that in 1914 the locomotive stock was in good condition. As the locomotives grew heavier more attention had to be given to the track; an experiment using rail weighing 90lbs per yard was laid near Wardley in 1906, and as a result all the locomotive-worked sections were re-laid with 95lbs rail, though the old 75lbs rail continued in use on the inclines for many years. Nor were the six remaining inclines forgotten in these improvements. Between 1913 and 1915 two of the three stationary engines - those at Black Fell and Blackham's Hill - were completely rebuilt, thus eliminating the breakdowns to which the old engines had become rather prone.

But perhaps the greatest of all the improvements on the Railway was the final elimination of the chaldron waggon. It will be remembered that Palmer had increased the capacity of the original waggon from 53cwts to 70cwts from 1861 onwards, and subsequently waggons up to four tons were built, but the design was still very crude, and a vast fleet of waggons was needed to cope with the increasing output. The first 10-ton waggons had come from Usworth Colliery in the early 1880's, but these and later additions were not allowed to work further west than Springwell because of a "barrel" bridge on the Black Fell Incline. When this bridge had been rebuilt the provision of more 10-ton waggons went ahead. Some came from private builders, but the great majority were built at the Company's Shops at Springwell Colliery. Finally on one Sunday in the summer of 1911 all the remaining chaldron waggons were worked through from the western collieries, to which their work had latterly been confined, to Wardley, later to be burnt or sold. In completely eliminating the chaldron waggon the Company was among the leaders in the county's industrial railways; they survived at South Hetton until after the Second World War, and some are still in use at Seaham Harbour.

During this period the average price of Durham coal fluctuated. Having reached 11/4.12d in September 1900 it fell to 6/4.32d in March 1905, rose to 9/4.42d in December 1907, fell again to 7/5.91d in September 1911, only to rise to 10/3.75d in September 1913; there-

after it once again declined (1). But throughout this period there was a steady increase in the demand for coal, and in 1913 the British coal industry recorded its best-ever output figure of 287,000,000 tons. This trend was exemplified in the Durham coal-field. In 1901 the amount of coal raised by members of the Durham Coal Owners Association was 30,457,222 tons, which had risen in 1913 to 41,748,678 tons (2). In this increase the Partners shared, though the re-organisation at Dipton and Wardley did have a dampening effect. In 1901 the Partners' output was 1,502,998 tons, and this rose steadily until 1909, when 1,703,583 tons were raised; thereafter the total declined. Indeed, in common with several other large firms in the county, 1913 was not an exceptional year, despite the county's high overall figure. In 1914 the total was 1,592,760 tons, only 90,000 tons more than in 1901. The Company's share of the total output of the coal-field also fell. After rising to 3.40% in 1903 it fell to only 2.67% in 1912, though this figure is abnormal because of the time lag between the closure of Wardley and the opening of Follonsby. After 1912, although the Company's output showed an overall decline, their share of the total output increased, and this stood at 3.19% in 1914.

When one comes to look at the figures for the number of men and

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- (1) As quoted in Accountants' Certificates of the Durham Coal Owners Association, Vol. II.
 - (2) These totals will be slightly lower than those for County Durham as a whole as a few small firms were not members of the Association.

boys employed both above and below ground at the collieries, and relate these to the output figures for those collieries, some interesting facts emerge (1). If one reviews the whole of the firm's existence as a limited company into consideration, the first point to strike the attention is a considerable increase in the number employed. In 1884 the total number of persons employed in Durham was 4,869, which had risen to 6,164 in 1914, despite the sale of Usworth and Dunston, yet there was only 25,000 tons difference in output between the two years. If an approximation of the number of people employed in Northumberland be added to the 1884 figure, this would seem likely to rise to about 6,000, with a further rise to 7,000 in the 1890's.

In taking a closer look at the figures it is noticeable that in many cases the manpower employed rose without a corresponding rise in output, and that in some cases the output actually fell, as at Marley Hill between 1894 and 1904. In reviewing the figures for those employed underground, at collieries where production was declining, as at Wardley and Andrews House, the manpower also declines, and it would seem fair to suggest that there is some connection. The reverse is also true; Springwell is an example. Some collieries seem to have been much more inclined to employ boys (2) than others, Springwell and Usworth being notable examples. The engagement of

(1) For these figures see Appendix G.

(2) Those aged 15 or below.

labour was the responsibility of the colliery Manager, and it would seem that some took on more young labour than others in an attempt to keep down working costs. Many collieries, the Company's among them, employed boys only on Saturdays, allowing them to attend school during the week (1). It is true that many of these boys would go down the pit at 6 a.m. and at least in Victorian times might work a nine or ten hour shift, sometimes for as little as 1/6 per week; but overall the number of boys was slowly declining during this period, both as public conscience grew and as Acts of Parliament prevented them from being employed below a certain age and from going down the pit during the night.

It is not possible to relate the output per colliery to the number of men employed underground in terms of output per man shift, as is the system now, because the number of shifts worked by each colliery is not known. One is therefore left to fall back upon the rather less satisfactory comparison between output and the number of persons employed underground per year. In 1883, 485 tons was raised for each person employed below ground; by 1894 this had fallen to 363 tons, and though 400 tons was exceeded in 1897-1899 and 392 tons was achieved in 1905, there was thereafter a steady fall, and in 1912 the figure was only 291 tons. But after this there was a sharp rise, and in 1914 the figure rose to 345 tons, its highest level since 1909.

(1) The Company does not appear to have ever possessed any colliery schools.

But these figures must be treated with care, in that although there is no doubt that the output per man underground fell between 1883 and 1914, the causes of this may be variable, and short-term factors will often apply. The colliery may have suffered a strike, or encountered difficult working conditions or been severely troubled with water. But throughout the period there was a fall not only in the hours worked by each employee at a colliery (as, for example, after the Eight Hours Act of 1907) but also in the number of days worked by each colliery in a year; and so even to maintain output at existing levels the Company must have been obliged to engage more men. Consequently the Company's working charges in 1914 must have been very much higher than in 1884.

In turning to the section dealing with coke production, it will be noted at once that the production of beehive coke was very cheap and required only a small labour force. For example, in 1884 the 16,000 tons of coke made at both Dipton and Burnopfield were produced by only fourteen men in each case, and this kind of figure provides a good illustration of why coke manufacturers were so reluctant to build bye-product ovens. For some reason not evident, however, the cost to the Partners of converting coal into coke had always been fairly high. In 1880 it was 2/- per ton, falling to 1/11d per ton in 1887, but rising to 2/1.25d in 1894. This was higher than most of the large firms: in 1894 the comparable figures for the Consett Iron Company and Bolckow Vaughan were 1/5.64d and 2/0.73d

respectively (1); the average of all coke producers in the county was about 1/10d. The number of men employed by the Company in coke making was almost the same (180 compared with 177) in 1894 (when production was entirely by beehives) as in 1914 (when it was entirely from bye-product ovens); but the output in 1914 was well below half what it had been twenty years earlier, though it should be remembered that the Company profited not only from the coke made but also from the various bye-products.

Thus in the thirty years since the firm had been converted into a limited company it first attempted to carry on as before, and to a large extent succeeded in doing so. But after Alfred Palmer had taken over as Managing Director in 1896 the firm decided that its relationship with the Bowes estate must be put on a more satisfactory basis, and so the Company had to accept a reduction in the size of its holdings. After this had been done the firm was able to re-organise and develop those resources which remained, and more of the royalties which it possessed were opened out, especially in those areas producing gas coal, now the Company's main source of income. The change-over from beehive to bye-product ovens was completed, although the Company's coking business was by no means so important as it once had been. The large programme of capital investment carried out between 1900 and 1914 in all spheres of its activity enabled the Company to face the future with some degree of confidence. Nobody knew then that the great days of John Bowes & Partners had already passed.

(1) Taken from Durham Coal Owners Association Return No. 361A.

CONCLUSION.

Conclusion.

Between 1840 and 1914 the character of the coal industry in Durham changed considerably. When the Partners entered the industry the most profitable investment was to be made in raising coking coal and converting it into coke. In this field Durham gained a world-wide reputation, and the Partners became one of the most famous names in the coke trade. There was at that time a steadily-increasing demand from railways and from the iron industry. But as the large iron companies grew up they gradually acquired their own collieries, and with the demand for coke from the railways now in decline, coal companies in Durham were compelled to seek new markets. Here the Partners were fortunate when Palmer built up his huge iron-works and ship-yard at Jarrow, and the firm became to a certain extent the complementary part of Palmers Shipbuilding & Iron Co. Ltd., though its policy always remained independent of that company. In later years, however, the Company, whether voluntarily or otherwise, gave up its important position in the coking industry. Their change-over to bye-product ovens did not occur until a quarter of a century after their introduction in Durham, and their contribution to the coking trade during the Edwardian period was relatively small.

However, by 1914 the character of the Durham coal-field had changed. From Durham's point of view, the most important development in the later years of the nineteenth century was the growth in the demand for gas coal, especially as the use of gas for cooking and heating became more popular. This stimulated the development of the

eastern half of the Durham coal-field, where excellent gas coal was obtainable. Thus it is significant that all the collieries latterly acquired by the Partners were supplying the gas coal trade, and that this was the firm's most important business in 1914.

At one level the structure of the Partnership could be said to epitomise the basis of Victorian greatness in the world, being a partnership between a land-owner, a professional politician, an engineer and a business man; but it was more than this. Based on the land and wealth of an extensive land-owner, the firm was nevertheless raised to greatness by the ability, energy and determination of a man outside that class - a man taken into the partnership as Managing Partner because of those attributes, and allowed a very free hand by his fellow partners, although none of them could possibly be termed sleeping partners. Palmer, thus given the opportunity, was able to build up a huge industrial empire, self-contained to such an extent that it was almost unique, and so became one of the great Victorian industrialists. Yet John Bowes & Partners never became a subsidiary of Palmers Shipbuilding & Iron Co. Ltd., but remained an independent and famous name in its own right.

The sheer size of the Partners' holdings was exceptional in an industry where up to the First World War small units were the rule. The growth of large units was much more common in Durham than elsewhere, with land-owners like the Earl of Durham and the Marquis of Londonderry, and such firms as Bolckow Vaughan & Co. Ltd., Consett Iron Co. Ltd. and Pease & Partners Ltd. The Partners, however,

differed from these in that they built up their position by taking over collieries from firms either bankrupt or in decline, whereas the firms listed above expanded by sinking new collieries on hitherto unworked land. There was little movement towards the formation of bigger units by the amalgamation of two or more companies until after 1914 (1), when the great days of the coal-field were past and the long process of decline was under way. Most firms did, however, take advantage of limited liability, although the process was slow to start and took many years before it was complete (2).

The reasons behind the sales of 1897-1899 have been fully discussed above. The Company had little choice but to act as it did, and in a sense it was the price to be paid for the Partners' indiscretions of earlier years. But even after the changes of this period the Company remained among the biggest firms in the county, and its large programme of capital investment in the years before the First World War played an important part in maintaining its position in the trade.

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- (1) The only one of importance to occur before 1914 was the amalgamation of Lambton Collieries Ltd. and the Hetton Coal Co. Ltd. to form Lambton & Hetton Collieries Ltd. in August 1911, though earlier Priestman Collieries Ltd. had been built up by the amalgamation of four small companies over a number of years.
 - (2) The last of the large firms, Strakers & Love, did not become a limited company until May 1925.

After the First World War the Company suffered a further period of decline, forced upon it by the economic depression. Andrews House Colliery closed in 1920, to be followed by Pontop in 1927. The world-wide depression of 1929-1931 caused the closure of Felling, Springwell, the Vale Pit and Kibblesworth Grange Drift, while in 1940 Dipton was closed and Follonsby sold. But the link with the Earls of Strathmore remained (the 14th Earl served as Chairman of the Company for some years), and in July 1936 the then Duchess of York (the 14th Earl's youngest daughter and now Queen Elizabeth the Queen Mother) opened modern staithes at Jarrow and a new pit at Kibblesworth. In the following year a large new coke oven and by-products plant, with an adjacent coal-cleaning plant, was opened at Monkton, near Wardley (replacing the obsolete plant at Marley Hill, closed in the same year), and a new drift mine was won on Blackburn Fell, about $\frac{3}{4}$ mile east of Marley Hill.

Today Streatlam Castle and Gibside, on which Bowes and Hutt lavished so much care, lie in ruins, and Palmer's great Works at Jarrow lives on only in the memories of the older generation. Of their work (apart from the Bowes Museum and a few ships) there remain only the collieries - Marley Hill, Byermoor, Burnopfield, Blackburn Fell Drift, Kibblesworth, Follonsby and Wardley, which, with the Monkton Coking Plant and Washery and Jarrow Staithes, are still served by the railway - now, very appropriately, named the Bowes Railway - built for that purpose so many years ago. It is perhaps an ironic twist of fate that the colliery where it all began - Marley Hill -

could by 1985 be the only colliery still working in the whole of West Durham, once the scene of so much frenzied activity.

Thus the great days of John Bowes & Partners were over by 1914; but for their contribution to the industrial greatness of Victorian England, John Bowes, William Hutt, Nicholas Wood and Charles Mark Palmer deserve more than to be consigned to oblivion.

APPENDIX A

Coal output figures of John Bowes & Partners, 1871-1914

(from Statistical Returns of Durham Coal Owners Association)

(in tons)

APPENDIX ACoal output figures for John Bowes & Partners, 1871-1914
(in tons)

(As given in the Statistical Returns of the Durham Coal Owners Association and the Northumberland Coal Owners Association)

Colliery	1871	1872	1873	1874	1875
Marley Hill	171,572	176,256	179,036	175,099	181,838
Andrews House	67,385	52,402	56,719	73,915	78,457
Byermoor	116,906	110,800	48,947	90,734	100,342
Burnopfield	132,648	105,843	105,452	103,725	105,559
Dipton (1)	NIL	NIL	12,475	46,582	53,154
Pontop	107,876	112,665	99,566	96,905	81,118
Kibblesworth	143,808	129,035	125,042	124,238	133,838
Springwell	131,124	119,031	94,546	102,914	92,341
Wardley (2)	24,488	97,933	135,140	147,724	150,000
Shipcote	48,233	43,666	36,715	48,403	53,119
Norwood (3)	NIL	NIL	1,024	25,946	
Dunston (3)					68,636
Durham Collieries	944,040	947,631	894,662	1,036,185	1,098,402
Killingworth Gosforth Seaton Burn Dinnington			67,864 19,425 86,207 88,107		
Northumberland Collieries (4)	250,000	260,000	261,803	300,000	320,000
TOTAL OUTPUT	1,194,040	1,207,631	1,156,465	1,336,185	1,418,402

- (1) Dipton Colliery was closed until the summer of 1873.
- (2) Wardley Colliery began production in the summer of 1871. It was withdrawn from the Association in 1875, and the figure given here for that year is an approximation of its output.
- (3) Norwood Colliery was closed until the autumn of 1873. In 1875 it was superseded by Dunston Colliery, which began production in that year.
- (4) The only output figures from the Partners which survive in the Northumberland Returns are those for 1873 and 1896-1898. In other years an approximation has had to be made, and this should be borne in mind when considering the total output figures.

(iii)

Coal output figures, 1871-1914
(in tons)

Colliery	1876	1877	1878	1879	1880
Marley Hill		192,295		122,075	165,123
Andrews House		60,689		86,392	83,269
Byermoor		68,957		67,745	86,999
Burnopfield		101,954		107,282	128,978
Dipton (1)		50,000		66,258	114,301
Pontop	(6)	116,326	(7)	136,579	141,448
Kibblesworth		123,819		137,093	132,122
Springwell		111,659		136,104	157,841
Wardley (2)		145,000		140,000	155,000
Shipcote (3)		47,000			
Dunston (4)		NIL		NIL	NIL
Durham Collieries	?	1,017,699	?	990,528	1,165,081
Northumberland Collieries (5)	?	250,000	?	250,000	270,000
TOTAL OUTPUT	?	1,267,699	?	1,240,528	1,435,081

- (1) Dipton Colliery was withdrawn from the Association in 1877, but had rejoined by 1879. The figure given here for 1877 is an approximation.
 - (2) Wardley Colliery was not a member of the Association between 1875 and 1883. The figures given here are approximations.
 - (3) Shipcote Colliery was withdrawn from the Association by 1877; the figure given here for 1877 is an approximation. The colliery closed in 1879.
 - (4) Dunston Colliery was closed in November 1876, and did not re-open until 1890.
 - (5) In the absence of the returns for Northumberland, the figures given here are approximations. Gosforth Colliery closed in 1877.
- N.B. In view of the four approximations included in the figures for 1877, the total figure for this year should be treated with caution.
- (6) The volume of returns for 1876 is missing.
 - (7) The Partners' return is missing from the volume of returns for 1878.

Coal output figures, 1871-1914 (3)
(in tons)

Colliery	1881	1882	1883	1884	1885
Marley Hill	168,355	207,180	204,989	185,187	165,851
Andrews House	76,403	84,336	77,009	73,522	72,988
Byermoor	96,024	101,040	100,484	86,530	85,141
Burnopfield	124,506	120,356	110,511	94,928	94,903
Dipton	101,569	114,224	120,409	118,966	106,082
Pontop	138,282	137,150	124,203	124,617	112,850
Kibblesworth	120,954	133,333	134,619	126,907	117,737
Springwell	137,426	140,241	157,998	148,787	140,007
Wardley (1)	135,000	148,222	181,958	252,245	196,779
Usworth (2)		219,006	272,904	217,330	179,225
Felling (3)			82,723	101,622	82,433
Dunston	NIL	NIL	NIL	NIL	NIL
Durham Collieries	1,098,519	1,405,088	1,567,807	1,530,641	1,353,996
Northumberland Collieries (4)	280,000	300,000	230,000	220,000	200,000
TOTAL OUTPUT	1,378,519	1,705,088	1,797,807	1,750,641	1,553,996

- (1) Wardley Colliery did not rejoin the Durham Coal Owners Association until March 1883; the figure given for 1881 is an approximation, but that for 1882 is given on the return for that year.
- (2) The output figure for 1882 is from the date of the Partners' possession, 20th March 1882. The figure for 1885 is affected by the explosion of 2nd March.
- (3) The output figure for 1883 is from the date of the Partners' possession, 5th March 1883.
- (4) In the absence of the returns for Northumberland, the figures given are approximations. Killingworth Colliery was closed in April 1882.

Coal output figures, 1871-1914 (4)
(in tons)

Colliery	1886	1887	1888	1889	1890
Marley Hill	184,121	187,578			
Andrews House	76,085	85,236			
Byermoor	88,507	120,561			
Burnopfield	111,975	126,372			
Dipton	116,449	122,124			
Pontop	127,250	152,945	(1)	(1)	(1)
Kibblesworth	125,579	138,548			
Springwell	158,992	195,359			
Wardley	189,637	156,392			
Usworth	179,070	223,505			
Felling	120,180	134,831			
Dunston	NIL	NIL			
Durham Collieries	1,477,813	1,643,443	?	?	?
Northumberland Collieries (2)	220,000	250,000			
TOTAL OUTPUT	1,697,813	1,893,443	?	?	?

(1) The volume of returns for 1888-1890 is missing.

(2) In the absence of the returns for Northumberland, the figures given are approximations. The Company now possessed only Seaton Burn and Dinnington Collieries in Northumberland.

Coal output figures, 1871-1914 (5)
(in tons)

Colliery	1891	1892	1893	1894	1895
Marley Hill		128,259	183,203	205,245	203,433
Andrews House		49,860	63,189	60,440	70,567
Byermoor		83,961	100,752	106,405	103,883
Burnopfield		91,598	110,954	118,110	107,778
Dipton		79,838	87,312	81,105	NIL
Pontop	(1)	85,202	81,072	94,602	95,606
Kibblesworth		96,728	109,383	117,226	119,540
Springwell		159,307	195,724	223,867	205,734
Wardley		166,372	190,222	194,500	227,361
Usworth		136,113	207,844	254,391	243,496
Felling		152,253	170,943	125,482	126,152
Dunston		96,625	91,937	110,338	84,173
Durham Collieries	1,658,274	1,326,116	1,592,535	1,692,211	1,587,728
Northumberland Collieries (2)	300,000	220,000	300,000	350,000	320,000
TOTAL OUTPUT	1,958,274	1,546,116	1,892,535	2,042,211	1,907,728

- (1) The individual figures for each colliery are not given on the return.
- (2) In the absence of the returns for Northumberland, the figures given are approximations.

Coal output figures, 1871-1914 (6)
(in tons)

Colliery	1896	1897	1898	1899	1900
Marley Hill	221,064	209,758	206,286	185,923	172,582
Andrews House	75,121	73,844	78,185	75,097	68,756
Byermoor	127,499	144,347	153,247	147,916	131,696
Burnopfield	117,462	110,605	118,232	123,620	127,931
Dipton (1)	NIL	NIL	NIL	NIL	40,001
Pontop	119,830	119,597	117,552	121,153	117,584
Kibblesworth	134,019	140,154	144,365	149,430	156,374
Springwell	234,168	245,481	251,851	255,774	268,379
Wardley	227,148	219,059	221,458	211,768	208,278
Usworth (2)	290,720				
Felling	132,330	146,038	169,642	184,326	197,934
Dunston (3)	115,481	159,242	155,989	65,647	
Durham Collieries	1,794,842	1,568,125	1,616,807	1,520,654	1,489,515
Seaton Burn	204,846	232,820	227,682		
Dinnington (4)	114,595	126,826	147,097		
Northumberland Collieries	319,441	359,646	374,779		
TOTAL OUTPUT	2,114,283	1,927,771	1,991,586	1,520,654	1,489,515

- (1) Dipton Colliery was closed until the latter half of 1900.
- (2) Usworth Colliery was sold in 1897; whether the Company should be credited with any tonnage for that year is not known.
- (3) Dunston Colliery was sold in July 1899; the figure given here is the tonnage raised by the Company to that date.
- (4) Seaton Burn and Dinnington Collieries were sold in January 1899; the tonnage which should be credited to the Company for the period up to 7th January 1899 is not known.

Coal output figures, 1871-1914 (7)
(in tons)

Colliery	1901	1902	1903	1904	1905
Marley Hill	170,874	176,793	180,901	190,124	203,318
Andrews House	68,228	64,262	70,429	64,616	60,803
Byermoor	118,923	119,946	119,039	126,011	129,787
Burnopfield	125,874	137,713	138,328	130,314	146,913
Dipton	66,259	78,666	92,244	96,881	86,902
Pontop	111,444	116,630	121,232	131,166	133,364
Kibblesworth	143,910	139,120	137,954	122,667	133,313
Springwell	241,317	252,334	257,312	253,144	250,616
Vale Pit (1)	38,446	52,281	65,858	74,169	81,567
Wardley	216,259	212,222	205,451	185,693	203,287
Felling	201,464	193,514	240,080	219,334	206,477
TOTAL OUTPUT	1,502,998	1,543,491	1,628,828	1,594,119	1,636,347

(1) The Vale Pit came into production during the summer of 1901.

Coal output figures, 1871-1914 (8)
(in tons)

Colliery	1906	1907	1908	1909	1910
Marley Hill	202,100	194,047	183,816	198,216	245,039
Andrews House	65,991	79,349	88,456	92,706	86,426
Byermoor	123,290	109,231	125,166	132,592	135,554
Burnopfield	138,750	132,032	124,531	132,661	130,991
Dipton	63,600	61,813	64,119	51,786	48,036
Pontop	132,500	127,889	135,761	152,635	143,531
Kibblesworth	140,431	139,512	137,257	141,251	132,399
Springwell	263,290	263,275	262,881	272,094	263,406
Vale Pit	98,133	125,444	122,328	125,995	119,884
Wardley	193,514	200,449	187,100	178,420	183,546
Felling	220,570	223,342	225,140	225,227	212,457
TOTAL OUTPUT	1,642,169	1,656,383	1,656,555	1,703,583	1,701,269

(x)

Coal output figures, 1871-1914 (9)
(in tons)

Colliery	1911	1912	1913	1914
Marley Hill	235,511	194,815	238,646	213,618
Andrews House	91,743	77,250	78,241	63,668
Byermoor	139,387	127,200	128,731	121,543
Burnopfield	121,594	101,605	118,230	125,391
Dipton (1)	41,565	50,052	95,590	108,621
Pontop	155,042	135,123	146,623	130,088
Kibblesworth	130,442	117,559	142,168	158,292
Springwell	267,905	248,355	270,101	242,732
Vale Pit	126,968	119,851	132,147	107,014
Wardley (2)	172,117			
Felling	204,346	185,125	216,355	174,985
Follonsby (3)		13,435	85,425	146,808
TOTAL OUTPUT	1,686,620	1,370,370	1,652,257	1,592,760

- (1) Dipton New Colliery began production in 1913.
- (2) Wardley Colliery was closed in December 1911.
- (3) Follonsby Colliery began production in June 1912.

APPENDIX B

Comparison between the coal output figures
of the Partners and other firms in the Durham coal-field
with an annual output over 500,000 tons, 1871-1914

APPENDIX B

Comparison between the coal output figures
of the Partners and other firms in the Durham coal-field
with an annual output over 500,000 tons, 1871-1914

(Figures from the Statistical Returns of the Durham Coal Owners Association)

Company	1871	1872	1873	1874	1875
John Bowes & Partners	1,194,040	1,207,631	1,156,465	1,336,185	1,418,402
Bolckow Vaughan (1)	?	1,499,925	1,462,631	1,735,420	1,989,426
Consett Iron Co. Ltd.	526,786	575,456	680,000	669,783	694,292
Earl of Durham	1,422,465	1,434,941	1,409,623	1,380,438	1,426,556
Haswell & Shotton (2)	600,000	516,893			503,198
Hetton Coal Co.	700,000	628,584	561,412	550,787	595,962
James Joicey & Co.	1,100,000	1,155,000	1,129,000	1,220,000	1,260,000
Marquis of Londonderry	978,384	915,127	829,667	850,935	916,976
Pease & Partners	?	1,372,652	1,333,188	1,266,518	1,365,765
Ryhope Coal Co.	631,771	519,390			
South Hetton Coal Co.	715,612	645,000	589,673	605,946	654,940
Strakers & Love (3)	1,137,000	1,119,499	1,105,010	962,085	1,001,811

N.B. Blanks indicate that the firm concerned did not raise 500,000 tons in that year.

Full titles of companies

- (1) Bolckow, Vaughan & Co. Ltd.
- (2) Haswell & Shotton Coal Co.
- (3) "Straker and Love" is also found.

Comparison between the coal output figures
of the Partners and other firms in the Durham coal-field
with an annual output over 500,000 tons, 1871-1914

(2)

Company	1876	1877	1878	1879	1880
John Bowes & Partners		1,267,699	(1)	1,240,528	1,435,081
Bell Brothers Ltd.					538,176
Bolckow Vaughan		2,092,723	1,824,981	1,705,843	2,003,617
Consett Iron Co. Ltd.		713,732	681,965	751,777	1,018,975
Earl of Durham		1,436,936	1,499,292	1,428,184	1,711,743
Harton Coal Co.		500,550	528,671	504,089	500,783
Hetton Coal Co.		731,118	718,067	705,389	809,783
James Joicey & Co.	(4)	1,233,000	1,289,000	1,154,000	1,325,800
Marquis of Londonderry		1,146,543	1,228,163	1,078,672	1,027,315
Pease & Partners		1,344,713	1,305,660	1,153,469	1,393,770
Pelaw Main (2)					537,070
Pelton (3)					556,333
Ryhope Coal Co.				523,478	586,853
South Hetton Coal Co.		871,328	940,045	787,418	989,861
Strakers & Love		586,859			879,524
William Hunter		519,578	518,778	558,753	570,075

N.B. Blanks indicate that the firm concerned did not raise 500,000 tons in that year.

- (1) The Partners' return is missing from the volume of returns for 1878.
- (2) "Pelaw Main Collieries" was the title given to the colliery side of the Birtley Iron Co. Ltd.
- (3) Full title: "The Owners of Pelton Colliery".
- (4) The volume of returns for 1876 is missing.

Comparison between the coal output figures
of the Partners and other firms in the Durham coal-field
with an annual output over 500,000 tons, 1871-1914

(3)

Company	1881	1882	1883	1884	1885
John Bowes & Partners	1,378,519	1,705,088	1,797,807	1,750,641	1,533,996
Bell Brothers Ltd.	538,781	534,681	548,756		
Bolckow Vaughan	2,074,074	2,089,438	2,084,790	1,533,156	1,594,190
Consett Iron Co. Ltd.	1,073,752	1,032,902	1,032,469	848,770	854,529
Earl of Durham	1,746,483	1,764,634	1,831,604	1,773,062	1,727,733
Harton Coal Co. Ltd.	517,525	527,467	575,115	633,307	712,633
Hetton Coal Co. Ltd.	839,439	806,719	810,025	817,983	882,147
James Joicey & Co.	1,265,900	1,298,439	1,398,720	1,531,388	1,464,001
Lord Dunsany & Pts (1)	519,410	524,725	515,988		
Marquis of Londonderry	1,051,445	1,191,604	1,340,654	1,371,267	1,414,841
Pease & Partners	1,364,293	1,342,253	1,388,247	1,336,388	1,235,679
Pelaw Main	531,367	782,612	784,147	785,493	792,532
Ryhope Coal Co. Ltd.	561,947	544,096	537,613	598,441	692,613
South Hetton Coal Co.	1,030,834	954,186	953,324	954,984	966,376
Strakers & Love	920,192	1,120,182	1,083,856	1,138,739	1,029,428
Tyne Coal Co. Ltd.					508,719
Walter Scott					507,101
Weardale Iron Co. (2)	?	1,230,016	1,303,059	1,185,904	1,087,432
Wearmouth Coal Co. Ltd.					511,882
William Hunter	675,817	561,316	589,141	557,535	520,310

N.B. Blanks indicate that the firm concerned did not raise 500,000 tons in that year.

(1) "Lord Dunsany & Partners" was formerly "The Owners of Pelton Colliery".

(2) Full title: "Weardale Iron & Coal Co. Ltd."

Comparison between the coal output figures
of the Partners and other firms in the Durham coal-field
with an annual output over 500,000 tons, 1871-1914

(4)

Company	1886	1887	1888	1889	1890
John Bowes & Partners	1,697,813	1,893,443			
Bolckow Vaughan	1,637,998	1,592,123			
Consett Iron Co. Ltd.	799,184	879,613			
Earl of Durham	1,699,896	1,831,045			
Harton Coal Co. Ltd.	768,733	827,776			
Hetton Coal Co. Ltd.	794,474	827,735			
James Joicey & Co.	1,401,279	1,537,777			
Lord Dunsany & Pts.	522,622	530,110			
Marquis of Londonderry	1,498,588	1,574,818	(1)	(1)	(1)
Pease & Partners	1,157,871	1,285,923			
Pelaw Main	842,640	820,344			
Ryhope Coal Co. Ltd.	700,546	698,839			
South Hetton Coal Co.	970,865	1,013,542			
Strakers & Love	976,222	1,011,721			
Walter Scott	514,431	521,727			
Weardale Iron Co.	994,234	1,076,287			
Wearmouth Coal Co. Ltd.	556,175	569,049			
William Hunter	526,410				

N.B. The blank indicates that the firm concerned did not raise 500,000 tons in that year.

(1) The volume of returns for 1888-1890 is missing.

Comparison between the coal output figures
of the Partners and other firms in the Durham coal-field
with an annual output over 500,000 tons, 1871-1914

(5)

Company	1891	1892	1893	1894	1895
John Bowes & Partners	1,958,274	1,546,116	1,892,535	2,042,211	1,907,728
Bell Brothers Ltd.	647,385		586,222	673,556	656,565
Bolckow Vaughan	1,490,559	1,180,680	1,485,007	1,524,362	1,517,608
Charlaw & Sacriston(1)	510,998		558,820	532,599	592,464
Consett Iron Co. Ltd.	1,002,478	790,411	1,030,301	1,181,474	1,128,142
Earl of Durham	2,107,459	1,651,008	2,172,499	2,377,044	2,319,262
Harton Coal Co. Ltd.	1,046,128	852,841	1,137,759	1,297,130	1,241,433
Hetton Coal Co. Ltd.	792,770	610,094	794,012	836,416	787,523
James Joicey & Co.	1,784,329	(2)	(2)	(2)	(2)
Lord Dunsany & Pts	547,476		646,245	663,912	651,230
Marquis of Londonderry	1,239,637	1,084,462	1,332,012	1,348,653	1,368,151
North Brancepeth (3)					519,779
Pease & Partners	1,311,125	973,928	1,197,643	1,359,968	1,200,090
Pelaw Main	782,342	639,452	846,965	880,227	859,103
Ryhope Coal Co. Ltd.	520,535		527,448	531,001	539,536
South Hetton Coal Co.	756,362	742,976	988,226	1,026,113	1,045,909
Stella Coal Co. Ltd.				526,440	
Strakers & Love	976,640	746,292	944,931	1,004,997	909,454
Walter Scott Ltd.				635,925	640,958
Weardale Iron Co.	1,219,414	922,042	1,215,248	1,316,451	1,267,095
Wearmouth Coal Co. Ltd.	540,563		600,526	638,159	648,159

N.B. Blanks indicate that the firms concerned did not raise 500,000 tons in that year.

The figures for 1892 were affected by the General Strike of that year.

- (1) Full title: "Charlaw & Sacriston Collieries Ltd." The firm was formerly William Hunter.
- (2) James Joicey & Co. Ltd. was not a member of the Association from 1892-1899.
- (3) Full title: "North Brancepeth Coal Co. Ltd."

Comparison between the coal output figures
of the Partners and other firms in the Durham coal-field
with an annual output over 500,000 tons, 1871-1914

(6)

Company	1896	1897	1898	1899	1900
John Bowes & Partners	2,114,283	1,927,711	1,901,586	1,520,654	1,489,515
Bell Brothers Ltd.	708,097	718,701	749,318	749,754	810,913
Bolckow Vaughan	1,531,537	1,422,434	1,453,639	1,346,370	1,556,932
Charlaw & Sacriston	592,464	622,658	654,439	655,950	624,440
Consett Iron Co. Ltd.	1,279,082	1,336,815	1,451,501	1,529,200	1,523,487
Harton Coal Co. Ltd.	1,349,578	1,515,895	1,542,192	1,500,119	1,508,646
Hetton Coal Co. Ltd.	828,728	836,575	802,272	813,463	832,509
Lambton Collieries (1)	2,673,845	2,896,765	2,850,046	2,879,869	2,973,181
Lord Dunsany & Pts	668,337	597,716	606,333	583,827	597,029
Londonderry Collieries (2)	1,134,893	1,183,329	1,214,391	1,182,596	1,159,363
Fease & Partners Ltd.	1,309,635	1,328,028	1,407,234	1,434,561	1,407,553
Pelaw Main	866,801	892,827	916,890	913,740	893,375
Priestman Collieries (3)				663,000	644,000
Ryhope Coal Co. Ltd.	560,590	580,315	559,666		
South Hetton Coal Co.	1,088,350	1,182,891	1,201,824	1,196,727	1,197,659
Stella Coal Co. Ltd.	543,850	619,210	698,204	718,991	721,556
Strakers & Love	958,777	1,024,341	1,047,929	1,056,122	1,017,834
Walter Scott Ltd.	681,605	683,011	733,275	747,641	723,499
Weardale S, C & C (4)	1,360,728	1,377,427	1,425,615	1,417,769	1,358,212
Wearmouth Coal Co. Ltd.	681,605	628,069	631,765	625,056	703,988

N.B. Blanks indicate that the firms concerned did not raise 500,000 tons in that year.

- (1) "Lambton Collieries Ltd." was the "Earl of Durham" until August 1896.
- (2) "Londonderry Collieries Ltd." was the "Marquis of Londonderry" until 1900.
- (3) Full title: "The Owners of the Priestman Collieries"; the firm was formed in 1897.
- (4) "Weardale Steel, Coal & Coke Co. Ltd." was the "Weardale Iron & Coal Co. Ltd." until September 1899.

Comparison between the coal output figures
of the Partners and other firms in the Durham coal-field
with an annual output over 500,000 tons, 1871-1914

(7)

Company	1901	1902	1903	1904	1905
John Bowes & Partners	1,502,998	1,543,491	1,628,828	1,594,119	1,636,347
Bell Brothers Ltd.	765,117	787,475	820,209	802,892	827,399
Bolckow Vaughan (1)	1,579,256	1,601,006	1,754,993	2,049,571	2,389,987
Charlaw & Sacriston	653,678	692,011	689,000	696,453	754,055
Consett Iron Co. Ltd.	1,413,194	1,454,518	1,562,387	1,643,079	1,766,905
Harton Coal Co. Ltd.	1,456,502	1,297,070	1,366,776	1,411,194	1,419,057
Hetton Coal Co. Ltd.	811,412	813,310	792,757	760,178	762,214
James Joicey & Co. Ltd.	2,033,737	2,131,872	2,281,125	2,335,701	2,368,059
Lambton Collieries	2,805,675	2,814,115	2,852,858	2,862,228	2,772,602
Londonderry Collieries	1,139,901	1,185,553	1,247,131	1,314,953	1,319,465
Pease & Partners Ltd. (2)	1,351,827	1,368,454	1,747,109	1,614,638	1,797,103
Pelaw Main	896,948	937,397	1,040,826	1,090,718	1,186,825
Pelton (3)	552,230	581,898	580,232	574,536	569,067
Priestman Collieries	664,000	679,000	859,000	881,000	938,000
Ryhope Coal Co. Ltd.		526,786	506,102	505,767	515,067
South Hetton Coal Co.	1,183,247	1,137,763	1,149,919	1,155,854	1,161,615
Stella Coal Co. Ltd.	702,290	741,882	786,188	783,248	822,619
H. Stobart & Co. Ltd.				521,209	584,239
Strakers & Love	974,677	966,371	1,045,194	1,004,640	1,085,425
Walter Scott Ltd.	682,579	734,528	724,456	754,226	741,583
Weardale S, C & C	1,333,096	1,397,158	1,401,205	1,271,136	1,344,509
Wearmouth Coal Co. Ltd. (4)	790,236	950,946	1,129,429	1,306,489	1,301,318

N.B. Blanks indicate that the firm concerned did not raise 500,000 tons in that year.

- (1) The large increase in output was due to the opening of Dean & Chapter Colliery during this period.
- (2) The large increase in output was due to the absorption of the South Durham Coal Co. Ltd. in 1903.
- (3) Full title: "The Owners of Pelton Colliery Ltd." (Lord Dunsany & Partners until June 1901).
- (4) The large increase in output was due to the opening of Hylton Colliery.

Comparison between the coal output figures
of the Partners and other firms in the Durham coal-field
with an annual output over 500,000 tons, 1871-1914

(8)

Company	1906	1907	1908	1909	1910
John Bowes & Partners	1,642,169	1,656,383	1,656,555	1,703,583	1,701,269
Bell Brothers Ltd.	827,968	819,039	792,338	897,727	894,387
Bolckow Vaughan	2,739,037	2,868,071	2,633,815	2,494,698	2,438,338
Charlaw & Sacriston	776,125	782,896	789,134	805,156	734,954
Consett Iron Co. Ltd.	1,972,480	2,130,961	2,166,318	2,343,677	2,288,552
Harton Coal Co. Ltd.	1,398,630	1,398,382	1,562,968	1,760,464	2,042,306
Hetton Coal Co. Ltd.	776,447	803,102	798,707	786,918	773,243
Horden Collieries Ltd.	583,466	829,616	913,872	1,038,707	788,280
James Joicey & Co. Ltd.	2,328,737	2,328,140	2,230,910	2,201,342	1,978,378
Lambton Collieries	2,911,317	2,950,995	2,958,491	3,157,226	3,118,277
Londonderry Collieries	1,407,089	1,400,604	1,480,418	1,637,192	1,616,658
Pease & Partners Ltd.	1,968,644	1,982,357	2,002,756	2,072,819	2,094,652
Pelaw Main	1,214,442	1,217,238	1,259,588	1,341,643	1,293,400
Pelton	569,056	620,259	619,071	651,817	663,372
Priestman Collieries	987,786	1,011,383	1,000,398	1,127,679	1,142,372
Ryhope Coal Co. Ltd.	516,313	507,859		533,767	
South Hetton Coal Co.	1,197,627	1,227,718	1,196,900	1,171,845	802,050
Stella Coal Co. Ltd.	811,002	860,751	913,422	947,830	983,123
H. Stobart & Co. Ltd.	596,704	644,598	635,198	675,889	606,488
Strakers & Love	1,091,771	1,082,029	1,007,532	1,080,969	1,002,143
Walter Scott Ltd.	716,055	611,224	696,725	718,217	647,818
Weardale S, C & C	1,320,566	1,421,627	1,455,831	1,488,088	1,431,823
Wearmouth Coal Co. Ltd.	1,245,465	1,264,054	1,226,371	1,276,166	1,230,293

N.B. Blanks indicate that the firm concerned did not raise 500,000 tons in that year.

Comparison between the coal output figures
of the Partners and other firms in the Durham coal-field
with an annual output over 500,000 tons, 1871-1914

(9)

Company	1911	1912	1913	1914
John Bowes & Partners	1,686,620	1,370,370	1,652,257	1,592,760
Bell Brothers Ltd.	888,036	825,276	898,122	829,353
Bolckow Vaughan	2,511,236	2,259,317	2,352,444	2,180,566
Charlaw & Sacriston	748,512	696,033	719,912	660,371
Consett Iron Co. Ltd.	2,399,265	2,157,828	2,243,615	2,073,731
Harton Coal Co. Ltd.	2,172,292	2,069,346	2,427,686	2,253,665
Horden Collieries Ltd.	1,189,108	1,160,233	1,320,877	1,286,506
James Joicey & Co. Ltd.	2,072,236	1,751,902	1,785,527	1,355,644
Lambton & Hetton (1)	4,118,501	3,897,804	4,121,694	3,369,403
Londonderry Collieries	1,785,742	1,561,654	1,762,044	1,585,809
North Bitchburn (2)		776,876	906,280	873,542
Pease & Partners Ltd.	2,139,394	1,969,294	2,352,444	2,140,056
Pelaw Main	1,335,830	1,272,995	1,299,296	1,202,158
Pelton	619,130	556,103	561,932	
Priestman Collieries	1,169,250	1,065,973	1,220,292	1,066,511
Ryhope Coal Co. Ltd.	511,566		539,026	501,896
South Hetton Coal Co.	1,166,564	1,082,012	1,007,793	1,011,461
South Moor (3)	?	?	?	1,504,276
Stella Coal Co. Ltd.	1,097,663	993,651	1,056,681	908,089
H. Stobart & Co. Ltd.	598,026	567,863	647,325	664,768
Strakers & Love	1,100,183	943,862	1,021,574	957,096
Walter Scott Ltd.	628,364	517,492	539,481	526,122
Weardale S, C & C	1,444,132	1,396,440	1,483,279	1,251,450
Wearmouth Coal Co. Ltd.	1,232,034	943,862	987,480	857,638

N.B. Blanks indicate that the firm concerned did not raise 500,000 tons in that year.

- (1) "Lambton & Hetton Collieries Ltd." was formed by the amalgamation of "Lambton Collieries Ltd." and the "Hetton Coal Co. Ltd." in August 1911; thus about 600,000 of the figure for that year should be credited to the Hetton Coal Co. Ltd.
The reduction in 1914 was due to the sale of four collieries to Sir B. Samuelson & Co. Ltd. in that year.
- (2) Full title: "North Bitchburn Coal Co. Ltd." This company absorbed the Thrislington Coal Co. Ltd. in 1911.
- (3) Full title: "South Moor Colliery Co. Ltd." This company was formed in 1889, but does not appear to have been a member of the Durham Coal Owners Association until 1914.

APPENDIX C

The coal output of John Bowes & Partners as a percentage
of the total output of the Northumberland & Durham coal-field
1871-1914

APPENDIX C

The coal output of John Bowes & Partners as a percentage
of the total output of the Northumberland & Durham coal-field
1871-1914

<u>Year</u>	<u>Coal-field output (1) in million tons</u>	<u>Output of Partners in tons</u>	<u>%</u>
1871	29.2	1,194,040	4.09
1872	28.6	1,207,631	4.57
1873	29.7	1,156,465	3.89
1874	30.6	1,336,180	4.37
1875	32.3	1,418,402	4.39
1876	32.3	No	
1877	31.4	figures	
1878	30.2	available (2)	
1879	28.8	1,240,528	4.31
1880	34.9	1,435,081	4.11
1881	35.6	1,378,519	3.87
1882	36.3	1,705,088	4.70
1883	37.4	1,797,807	4.81
1884	36.1	1,750,641	4.85
1885	35.1	1,553,996	4.43
1886	34.8	1,697,813	4.88
1887	34.5	1,893,443	5.49
1888	37.6	No	
1889	39.1	figures	
1890	39.7	available	
1891	39.1	1,958,274	5.01
1892	32.4	1,546,116	4.77
1893	39.9	1,892,535	4.76
1894	42.1	2,042,211	4.85
1895	39.8	1,907,728	4.79

The coal output of John Bowes & Partners as a percentage
of the total output of the Northumberland & Durham coal-field
1871-1914
(2)

<u>Year</u>	<u>Coal-field output</u> <u>in million tons</u>	<u>Output of Partners</u> <u>in tons</u>	<u>%</u>
1896	41.8	2,114,283	5.06
1897	43.6	1,927,771	4.42
1898	45.3	1,991,586	4.40
1899	46.1	1,520,654	3.30
1900	46.3	1,489,515	3.22
1901	45.2	1,502,998	3.33
1902	46.4	1,543,491	3.33
1903	47.9	1,628,828	3.40
1904	48.4	1,594,119	3.29
1905	50.1	1,636,347	3.27
1906	52.1	1,642,169	3.17
1907	54.0	1,656,383	3.07
1908	53.9	1,656,555	3.07
1909	55.3	1,703,583	3.08
1910	52.6	1,701,269	3.25
1911	56.4	1,686,620	2.99
1912	51.3	1,370,370	2.67
1913	56.4	1,652,257	2.93
1914	50.0	1,592,760	3.19

- (1) Figures taken from MITCHELL, B. R. & DEANE, P. Abstract of British Historical Statistics. Cambridge: Cambridge University Press, 1962, p.
- (2) The approximate figure for 1877 was 1,267,699 tons, which would give a percentage of 4.04.

APPENDIX D

Average net selling price of all types of Durham coal,
as given on the Accountants' Certificates of the
Durham Coal Owners Association and the Durham Miners Association,
compared with the coal output figures of John Bowes & Partners,
1871-1914

APPENDIX D

Average net selling price of all types of Durham coal,
as given on the Accountants' Certificates of the
Durham Coal Owners Association and the Durham Miners Association,
compared with the coal output figures of John Bowes & Partners,
1871-1914

<u>Date (1)</u>	<u>Price (2)</u>	<u>Partners' output</u>	<u>Date</u>	<u>Price</u>	<u>Partners' output</u>
12/1871	5/2.63	1,194,040	the first four months ending in October		
/1872		1,207,631	1879:		
1/1873	15/10.46		10/1879	4/3.33	
/1873		1,156,465	/1879		1,240,528
4/1874	12/8.36		2/1880	4/4.35	
8/1874	10/1.87		6/1880	4/5.25	
/1874		1,336,180	10/1880	4/8.26	
2/1875	7/6.45		/1880		1,435,081
10/1875	6/6.32		2/1881	4/8.66	
11/1875	6/0.84		6/1881	4/6.33	
/1875		1,418,402	10/1881	4/7.16	
6/1876	5/8.14		/1881		1,378,519
/1876		?	2/1882	4/7.93	

From June 1876 to March 1879 the price of coal and coke was combined and the average price calculated every four months, the first period ending in March 1877:

3/1877	5/3.97	
7/1877	5/3.71	
11/1877	5/2.74	
/1877		?
3/1878	4/11.29	
7/1878	4/8.55	
11/1878	4/7.65	
/1878		?
3/1879	4/5.16	

From this point the calculation was made every three months, the first three months ending in June 1882:

6/1882	4/6.63	
9/1882	4/9.72	
12/1882	4/11.34	1,705,088
3/1883	4/10.20	
6/1883	4/10.71	
9/1883	4/11.48	
12/1883	5/0.42	1,797,807
3/1884	4/7.54	
6/1884	4/8.07	
9/1884	4/8.47	
12/1884	4/8.75	1,750,641

In March 1879 the system was altered to include the price of coal alone,

Average net selling price of all types of Durham coal,
1871-1914 (2)

<u>Date</u>	<u>Price</u>	<u>Partners' output</u>	<u>Date</u>	<u>Price</u>	<u>Partners' output</u>
3/1885	4/6.01		3/1892	6/5.86	
6/1885	4/7.20		6/1892	6/2.20	
9/1885	4/6.13		9/1892	6/2.43	
12/1885	4/7.62	1,553,996	12/1892	5/11.06	1,546,116
3/1886	4/5.49		3/1893	5/4.48	
6/1886	4/4.79		6/1893	5/1.38	
9/1886	4/4.63		9/1893	5/6.77	
12/1886	4/5.56	1,697,813	12/1893	6/1.77	1,892,535
3/1887	4/5.65		3/1894	5/4.80	
6/1887	4/5.21		6/1894	5/4.38	
9/1887	4/4.04		9/1894	5/7.29	
12/1887	4/6.45	1,893,443	12/1894	5/5.04	2,042,211
3/1888	4/4.69		3/1895	5/2.25	
6/1888	4/3.91		6/1895	5/1.65	
9/1888	4/5.58		9/1895	5/0.21	
12/1888	4/7.04	?	12/1895	5/1.83	1,907,728
3/1889	4/7.77		3/1896	5/0.23	
6/1889	4/10.49		6/1896	5/0.54	
9/1889	5/2.93		9/1896	5/0.93	
12/1889	5/9.88	?	12/1896	5/3.12	2,114,283
3/1890	6/10.81		3/1897	5/2.08	
6/1890	7/4.66		6/1897	5/4.01	
9/1890	7/5.62		9/1897	5/3.84	
12/1890	7/4.85	?	12/1897	5/5.27	1,927,771
3/1891	7/3.16		3/1898	5/4.18	
6/1891	7/1.64		6/1898	5/10.22	
9/1891	6/9.78		9/1898	6/0.09	
12/1891	6/7.93	1,958,274	12/1898	6/0.35	1,991,586

Average net selling price of all types of Durham coal,
1871-1914 (3)

<u>Date</u>	<u>Price</u>	<u>Partners' output</u>	<u>Date</u>	<u>Price</u>	<u>Partners' output</u>
3/1899	6/3.12		3/1907	7/9.63	
6/1899	6/7.44		6/1907	8/6.00	
9/1899	7/2.02		9/1907	9/2.11	
12/1899	7/9.93	1,520,654	12/1907	9/4.42	1,656,383
3/1900	8/7.71		3/1908	9/1.31	
6/1900	9/11.19		6/1908	8/10.43	
9/1900	11/4.12		9/1908	8/6.54	
12/1900	11/3.86	1,489,515	12/1908	8/2.82	1,656,555
3/1901	9/9.90		3/1909	7/6.91	
6/1901	8/7.11		6/1909	7/6.68	
9/1901	7/10.97		9/1909	7/5.96	
12/1901	7/10.93	1,502,998	12/1909	7/6.19	1,703,583
3/1902	7/5.68		3/1910	7/11.53	
6/1902	7/1.89		6/1910	7/11.73	
9/1902	7/3.32		9/1910	8/1.03	
12/1902	7/4.26	1,543,491	12/1910	7/10.18	1,701,269
3/1903	7/1.85		3/1911	7/6.28	
6/1903	7/1.14		6/1911	7/6.75	
9/1903	7/6.76		9/1911	7/5.91	
12/1903	6/11.53	1,628,828	12/1911	7/7.18	1,686,620
3/1904	6/7.66		3/1912	8/1.47	
6/1904	6/5.60		6/1912	8/0.65	
9/1904	6/5.29		9/1912	8/7.18	
12/1904	6/5.31	1,594,119	12/1912	8/11.80	1,370,370
3/1905	6/4.32		3/1913	9/9.83	
6/1905	6/4.38		6/1913	10/2.49	
9/1905	6/5.45		9/1913	10/3.75	
12/1905	6/7.05	1,636,347	12/1913	10/2.17	1,652,257
3/1906	6/7.32		3/1914	9/11.79	
6/1906	6/10.85		6/1914	9/9.08	
9/1906	7/0.88		9/1914	9/4.62	
12/1906	7/3.00	1,642,169	12/1914	9/0.37	1,592,760

(1) The dates given are inclusive to the end of the month or period stated. No dates other than those given are available before the four-monthly period ending in March 1877.

(2) Price per ton in shillings and pence.

APPENDIX E

Coke output figures of John Bowes & Partners, 1872-1914

(from Statistical Returns of Durham Coal Owners Association)

(in tons)

APPENDIX ECoke output figures of John Bowes & Partners, 1872-1914.

(from Statistical Returns of Durham Coal Owners Association)
(in tons)

Coke Ovens	1872	1873	1874	1875
Marley Hill	88,466	84,161	83,279	83,089
Byermoor & Crookbank	25,155	16,805	28,472	30,950
Burnopfield	40,086	38,242	35,746	29,887
Dipton (1)	NIL	8,082	9,635	9,424
Pontop	55,398	46,730	45,249	38,958
TOTAL OUTPUT	209,105	194,020	202,381	191,589

(1) The Dipton ovens were out of use until the summer of 1873.

Coke Ovens	1876	1877	1878	1879	1880
Marley Hill		92,343			
Byermoor & Crookbank		30,950			
Burnopfield	(1)	30,745	(2)	(2)	(2)
Dipton		NIL			
Pontop		51,262			
TOTAL OUTPUT		205,400			218,638

(1) The volume of returns for 1876 has not survived.

(2) The Association did not ask for any returns to be made between 1878 and 1883; the figure given here for 1880 is taken from a return made in 1894 (No. 361A) in which no individual figures are quoted.

Coke output figures of John Bowes & Partners, 1872-1914(in tons)
(2)

Coke Ovens	1881	1882	1883	1884	1885
Marley Hill				75,261	67,824
Byermoor & Crookbank				42,854	40,652
Burnopfield	(1)	(1)	(1)	16,337	14,885
Dipton				16,529	16,071
Pontop				36,030	34,803
South Shore (2)		.		2,653	-
TOTAL OUTPUT				189,664	174,235
Ovens in use (3)				747	643
Ovens out of use (3)				226	271

- (1) The Association did not ask for any returns to be made between 1881 and 1883.
- (2) The South Shore Ovens are only recorded on this return. They were presumably the old ovens at Gateshead, re-lit as a temporary expedient.
- (3) These figures were not required on the returns prior to 1884.

Coke Ovens	1886	1887	1888	1889	1890
Marley Hill		95,295	95,764	93,520	85,876
Byermoor & Crookbank (1)		52,072	54,936	55,924	50,953
Burnopfield	(2)	29,783	30,357	31,172	29,669
Dipton		16,580	15,499	14,804	14,506
Pontop		59,750	65,298	61,354	46,213
TOTAL OUTPUT		253,480	261,854	256,774	227,217
Ovens in use		874	892	910	865
Ovens out of use		50	32	14	75

- (1) The ovens at Crookbank ceased production in 1890.
- (2) The volume of returns for 1886 is missing.

Coke output figures of John Bowes & Partners, 1872-1914
(in tons)
(3)

Coke Ovens	1891	1892	1893	1894	1895
Marley Hill	84,324	32,764	46,463		50,994
Byermoor	51,562	35,023	34,298		26,382
Burnopfield	30,774	22,009	23,535	(1)	19,296
Dipton	9,831	2,722	13,338		NIL
Pontop	43,976	22,459	27,689		27,008
TOTAL OUTPUT	220,467	114,977	145,323	178,606	123,680
Ovens in use	654	579	557	(1)	512
Ovens out of use	285	360	382	(1)	427

N.B. 1892 was the year of the General Strike.

(1) No individual figures are given on the return for 1894.

Coke Ovens	1896	1897	1898	1899	1900
Marley Hill	69,863	76,460	80,863	90,568	83,999
Byermoor	42,064	42,417	52,282	54,581	49,133
Burnopfield	29,029	29,194	38,335	39,736	34,284
Dipton	NIL	NIL	NIL	NIL	NIL
Pontop	40,318	43,641	42,182	43,502	38,741
TOTAL OUTPUT	180,274	191,711	213,662	228,387	213,336
Ovens in use	600	563	586	681	471
Ovens out of use	339	370	245	152	367

Coke output figures of John Bowes & Partners, 1872-1914
(in tons)
(4)

Coke Ovens	1901	1902	1903	1904	1905
Marley Hill	76,426	69,345	75,663	60,472	59,156
Byermoor	42,651	32,685	32,623	33,775	36,796
Burnopfield	32,207	28,913	29,951	22,318	(1)
Dipton	13,024	4,102	(2)		
Pontop	28,591	23,121	23,058	21,608	24,953
TOTAL OUTPUT	192,899	158,166	161,195	138,173	120,905
Ovens in use	592	467	438	311	310
Ovens out of use	247	353	366	489	494

(1) The ovens at Burnopfield ceased production in 1904.

(2) The ovens at Dipton ceased production in 1902.

Coke Ovens	1906	1907	1908	1909	1910
Marley Hill (beehive)	57,091	55,817	20,449	(1)	
Marley Hill (bye-product)			20,988	84,144	81,480
Byermoor	34,771	36,421	26,620	25,739	29,230
Pontop	24,417	25,576	21,532	7,415	(2)
TOTAL OUTPUT	116,279	117,814	89,589	117,298	110,710
Ovens in use (beehive)	312	300	216	124	103
Ovens in use (bye-product)			60	60	60
Ovens out of use (3)	492				

(1) The beehive ovens at Marley Hill ceased production in 1908.

(2) The ovens at Pontop ceased production in 1909.

(3) The figure for the number of ovens out of use is not recorded on the returns after 1906.

Coke output figures of John Bowes & Partners, 1872-1914
(in tons)
(5)

Coke Ovens	1911	1912	1913	1914
Marley Hill (bye-product)	84,332	75,577	80,120	77,690
Byermoor (beehive)	12,453	(1)		
TOTAL OUTPUT	96,765	75,577	80,120	77,690
Ovens in use (beehive)	52			
Ovens in use (bye-product)	60	60	60	60

(1) The ovens at Byermoor ceased production in 1911.

APPENDIX F

Comparison between the coke output figures of the Partners
and those of other firms with an annual output over 100,000 tons,
1872-1914

APPENDIX F

Comparison between the coke output figures of the Partners
and those of other firms with an annual output over 100,000 tons,
1872-1914

Company	1872	1873	1874	1875
John Bowes & Partners	209,105	194,020	202,381	191,589
Bolckow Vaughan (1)	422,280	424,592	414,161	486,213
Consett Iron Co. Ltd.	240,000	250,000	272,636	278,342
North Brancepeth (2)			107,499	108,501
Pease & Partners	573,375	551,546	(3)	618,717
Strakers & Love	432,063	399,973	356,482	386,157

N.B. Blanks indicate that the firm concerned did not produce 100,000 tons in that year.

- (1) Full title: Bolckow, Vaughan & Co. Ltd.
- (2) Full title: North Brancepeth Coal Co. Ltd.
- (3) The return for Pease & Partners is missing from the volume of returns for 1874.

Comparison between the coke output figures of the Partners
and those of other firms with an annual output over 100,000 tons,
1872-1914
(2)

Company	1876	1877	1878	1879	1880
John Bowes & Partners		205,400	?		218,638
Bearpark Coal & Coke (1)					116,203
Bell Brothers Ltd.					253,974
Bolckow Vaughan		527,468	(2)		(2)
Consett Iron Co. Ltd.		331,302	379,923		459,485
Ferens & Love	(5)		119,158	(5)	116,238
North Brancepeth		134,321	(2)		119,279
Owners of Hamsteels (3)			129,937		
Fease & Partners		641,167	(2)		676,063
Strakers & Love		203,496	165,710		341,437
Weardale Iron (4)		?	?		481,392
OUTPUT OF ASSOCIATION MEMBERS (6)					3,229,975

- (1) Full title: Bearpark Coal & Coke Co. Ltd.
- (2) These returns, if made, have not survived.
- (3) Full title: The Owners of Hamsteels Colliery.
- (4) Full title: Weardale Iron & Coal Co. Ltd.
- (5) No returns were made in 1879 and 1880; the figures quoted for the latter year are taken from a return (Vol. 361A) made in 1894.
- (6) The returns before 1880 are incomplete, and in view of this no total figure has been quoted before this date. The output of the Association members is a good general guide, as all but a few small coke manufacturers were members of the Association.

Comparison between the coke output figures of the Partners
and those of other firms with an annual output over 100,000 tons,
1872-1914.
 (3)

Company	1881	1882	1883	1884	1885
John Bowes & Partners				189,664	174,285
Bearpark Coal & Coke				122,422	
Bell Brothers Ltd.				215,004	237,980
Bolckow Vaughan				544,273	513,286
Consett Iron Co. Ltd.				426,342	407,315
Ferens & Love				103,034	
North Bitchburn (1)	(2)	(2)	(2)	122,155	130,801
North Brancepeth					119,260
Owners of Hamsteels				101,804	111,339
Pease & Partners Ltd.				664,063	612,003
H. Stobart & Co. Ltd.				131,611	128,459
Strakers & Love				563,097	515,461
Weardale Iron				461,446	407,544
OUTPUT OF ASSOCIATION MEMBERS				4,369,463	4,176,082

N.B. Blanks indicate that the firm concerned did not produce 100,000 tons in that year.

(1) Full title: North Bitchburn Coal & Coke Co. Ltd.

(2) The Association did not collect returns in 1881, 1882 and 1883.

Comparison between the coke output figures of the Partners
and those of other firms with an annual output over 100,000 tons,
1872-1914
(4)

Company	1886	1887	1888	1889	1890
John Bowes & Partners		253,480	261,854	256,774	227,217
Bearpark Coal & Coke		115,730	166,197	162,245	161,904
Bell Brothers Ltd.		194,680	218,016	278,546	286,821
Bolckow Vaughan		506,285	489,581	489,317	530,166
Consett Iron Co. Ltd.		435,747	376,064	469,457	506,425
Ferens & Love			102,867	106,261	
North Brancepeth	(1)	125,006	124,689	124,932	129,776
Owners of Hamsteels		115,877	104,248	105,466	
Pease & Partners Ltd.		682,563	686,965	713,219	731,280
H. Stobart & Co.		110,953	120,504	141,786	159,700
Strakers & Love		509,350	520,602	514,955	399,600
Weardale Iron		385,963	422,876	445,882	422,472
OUTPUT OF ASSOCIATION MEMBERS		4,250,071	4,355,581	4,637,124	4,549,609

N.B. Blanks indicate that the firm concerned did not produce 100,000 tons in that year.

(1) The volume of returns for 1886 is missing.

Comparison between the coke output figures of the Partners
and those of other firms with an annual output over 100,000 tons,

1872-1914

(5)

Company	1891	1892	1893	1894	1895
John Bowes & Partners	220,467	114,977	145,323	178,606	123,680
Bearpark Coal & Coke	138,709		157,998	168,245	157,929
Bell Brothers Ltd.	286,711	198,747	272,854	283,849	291,377
Bolckow Vaughan	466,119	324,386	392,135	415,993	429,430
Consett Iron Co. Ltd.	428,542	308,303	360,064	432,457	429,304
North Brancepeth	135,945	100,939	133,454	123,038	128,524
Pease & Partners Ltd.	702,047	508,104	619,493	678,416	611,877
H. Stobart & Co.	133,052		106,084	102,698	
Strakers & Love	416,420	319,662	399,492	418,490	381,660
Weardale Iron	394,776	285,370	389,891	401,957	390,048
OUTPUT OF ASSOCIATION MEMBERS	4,244,325	2,938,676	3,811,889	4,093,743	3,974,671

N.B. Blanks indicate that the firm concerned did not produce 100,000 tons in that year.

1892 was the year of the General Strike.

Comparison between the coke output figures of the Partners
and those of other firms with an annual output over 100,000 tons,

1872-1914

(6)

Company	1896	1897	1898	1899	1900
John Bowes & Partners	180,274	191,711	213,662	228,387	213,336
Bearpark Coal & Coke	161,974	160,267	163,048	165,704	164,967
Bell Brothers Ltd.	300,399	306,597	310,861	302,715	299,081
Bolckow Vaughan	487,849	477,625	472,719	450,451	514,645
Cochrane & Co. Ltd.		158,476	150,718	159,954	150,560
Consett Iron Co. Ltd.	488,476	500,129	512,764	589,333	586,339
James Joicey & Co. Ltd.					109,776
North Brancepeth		132,444	133,804	146,502	146,078
Owners of Hamsteels				101,705	103,143
Pease & Partners Ltd.	710,591	739,470	765,819	767,754	757,618
Priestman (1)			146,758	161,994	223,082
Stella Coal Co. Ltd.				120,871	112,105
H. Stobart & Co. Ltd.	108,887			102,480	127,853
Strakers & Love	408,548	443,786	480,021	489,427	478,504
Weardale S, C & C (2)	392,599	382,871	388,912	384,189	344,682
OUTPUT OF ASSOCIATION MEMBERS	4,435,345	4,671,985	4,798,679	5,072,374	5,293,015

N.B. Blanks indicate that the firms concerned did not produce 100,000 tons in that year.

- (1) Full title: The Owners of the Priestman Collieries.
- (2) The "Weardale Iron & Coal Co. Ltd." became the "Weardale Steel, Coal & Coke Co. Ltd." in 1899.

Comparison between the coke output figures of the Partners
and those of other firms with an annual output over 100,000 tons,

1872-1914

(7)

Company	1901	1902	1903	1904	1905
John Bowes & Partners	192,899	158,166	161,195	138,173	120,905
Bearpark Coal & Coke	110,607	140,894	153,109	130,005	155,467
Bell Brothers Ltd.	299,087	298,735	302,401	306,320	305,254
Bolckow Vaughan	457,492	464,564	501,902	507,487	621,279
Cochrane & Co. Ltd.	153,014	155,134	157,947	155,828	183,893
Consett Iron Co. Ltd.	475,070	463,103	497,365	487,017	518,460
James Joicey & Co. Ltd.			100,873	100,035	107,366
North Brancepeth	134,852	148,406	134,241	127,821	144,429
Pease & Partners Ltd.	659,103	747,908	739,205	632,238	682,194
Priestman Collieries (1)	211,051	248,530	261,300	279,783	339,000
Stella Coal Co. Ltd.			101,345	101,518	103,885
H. Stobart & Co. Ltd.	117,115	120,316	124,326	121,344	130,611
Strakers & Love	420,029	435,539	442,118	401,986	463,139
Weardale S, C & C.	267,757	289,849	277,140	191,821	220,512
OUTPUT OF ASSOCIATION MEMBERS	4,532,646	4,790,212	4,862,528	4,558,783	4,977,128

N.B. Blanks indicate that the firm concerned did not produce 100,000 tons in that year.

- (1) "The Owners of the Priestman Collieries" became "Priestman Collieries Ltd." in 1903.

Comparison between the coke output figures of the Partners
and those of other firms with an annual output over 100,000 tons,

1872-1914

(8)

Company	1906	1907	1908	1909	1910
John Bowes & Partners	116,279	117,814	89,589	117,298	110,710
Bearpark Coal & Coke	172,023	176,442	154,653	143,013	158,590
Bell Brothers Ltd.	306,789	305,425	287,835	277,299	277,019
Bolckow Vaughan	718,338	778,242	645,160	628,168	697,867
Cochrane & Co. Ltd.	186,193	185,466	182,285	192,031	185,381
Consett Iron Co. Ltd.	609,117	664,707	576,701	567,731	572,303
James Joicey & Co. Ltd.	109,041	129,559	121,489	117,406	100,513
North Brancepeth	145,203	145,382	139,901	120,097	103,080
Pease & Partners Ltd.	750,879	735,872	631,315	662,205	701,137
Priestman Collieries	386,508	400,648	357,876	373,141	390,147
H. Stobart & Co. Ltd.	135,145	140,737	133,328	160,690	145,063
Strakers & Love	449,406	421,948	356,625	376,300	373,683
Weardale S, C & C	231,021	232,765	249,182	296,881	297,013
OUTPUT OF ASSOCIATION MEMBERS					
bee-hive ovens (1)		4,433,888	3,643,880	3,334,654	3,207,314
non-recovery ovens (1)		83,278	89,532	85,911	86,260
bye-product ovens (1)		930,259	1,096,501	1,491,976	1,677,016
TOTAL	5,305,385	5,447,425	4,829,913	4,912,541	4,970,590

- (1) The figures for different types of ovens are not specifically asked for on the returns before 1907. On the earlier returns a distinction may be made between bee-hive and "patent", but no distinction is made between non-recovery and bye-product ovens. Nor has it been possible to compile figures for the "patent" ovens, as some firms did not distinguish between the output from different types of oven at the same colliery.

Comparison between the coke output figures of the Partners
and those of other firms with an annual output over 100,000 tons,

1872-1914

(9)

Company	1911	1912	1913	1914
John Bowes & Partners	96,765	75,577	80,120	77,690
Bearpark Coal & Coke	128,682	145,836	161,141	128,393
Bell Brothers Ltd.	251,627	242,967	279,621	221,318
Bolckow Vaughan	697,720	601,494	676,002	585,054
Cochrane & Co. Ltd.	190,448	167,167	196,082	190,223
Consett Iron Co. Ltd.	546,910	483,859	522,403	481,442
James Joicey & Co. Ltd.	111,643	105,052	117,841	
North Bitchburn (1)		149,040	162,900	158,224
North Brancepeth			105,503	
Pease & Partners Ltd.	644,933	613,294	785,737	690,186
Priestman Collieries	345,862	305,255	368,937	293,268
H. Stobart & Co. Ltd.	128,741	111,565	130,871	143,710
Strakers & Love	399,619	407,503	438,551	368,300
Walter Scott Ltd.				105,726
Weardale S, C & C	255,321	257,075	266,411	161,307
OUTPUT OF ASSOCIATION MEMBERS				
bee-hive ovens	2,656,191	2,394,605	2,529,097	1,757,119
Non-recovery ovens (2)	50,303	36,530	41,692	2,968
bye-product ovens	1,966,655	2,034,824	2,528,447	2,577,493
TOTAL	4,673,149	4,465,959	5,099,236	4,337,580

N.B. Blanks indicate that the firm concerned did not produce 100,000 tons in that year.

- (1) Full title: North Bitchburn Coal Co. Ltd.
- (2) The last non-recovery ovens ceased operation in the quarter ending March 1914.

APPENDIX G

Men and boys employed in County Durham

by John Bowes & Partners, 1884-1914

- (i) underground
- (ii) at the surface of collieries, coke ovens, brickworks and railways
- (iii) aggregate figures

APPENDIX G

Men and boys (1) employed at the Durham Collieries of
John Bowes & Partners, 1884-1914
 (i) underground

Colliery	1884		1885		1886		1887	
	m	b	m	b	m	b	m	b
Marley Hill	227	39	243	42	249	51	235	59
Andrews House	94	7	95	8	94	9	104	8
Byermoor	106	25	102	27	111	20	128	21
Burnopfield	151	32	143	31	149	27	164	26
Dipton	161	13	212	13	171	10	177	9
Pontop	177	23	188	27	183	16	196	23
Kibblesworth	192	27	186	26	195	25	208	24
Springwell	346	30	338	40	309	27	392	28
Wardley	496	33	710	34	395	74	537	16
Usworth	677	48	706	67	657	43	745	26
Felling	328	15	240	5	238	40	331	30
TOTALS	2,955	292	3,168	320	2,751	342	3,217	270
SUM TOTAL	3,247		3,488		3,093		3,487	
OUTPUT OF DURHAM COLLIERIES	1,567,807		1,530,641		1,353,996		1,477,813	
OUTPUT PER PERSON UNDERGROUND (tons)	485		439		438		427	

N.B. (a) In the years above the totals given are those quoted for the beginning of the year.

(b) The Association did not ask for returns between 1888 and 1892.

(1) Aged fifteen or under.

Men and boys employed at the Durham Collieries of
John Bowes & Partners, 1884-1914
 (underground)
 (2)

Colliery	1892	1893		1894		1895	
		m	b	m	b	m	b
Marley Hill		374	29	347	42	388	45
Andrews House		138	15	136	15	142	12
Byermoor		185	25	181	26	184	26
Burnopfield		187	17	190	17	195	16
Dipton (1)		203	18	185	16	NIL	
Pontop		188	27	183	24	188	22
Kibblesworth	(2)	226	22	232	16	239	13
Springwell		532	46	597	40	573	31
Wardley		474	25	619	31	607	41
Usworth		754	48	889	48	961	44
Felling		563	28	407	22	448	21
Dunston		393	29	379	14	341	10
TOTALS		4,217	329	4,345	311	4,266	281
SUM TOTAL		4,546		4,656		4,547	
OUTPUT OF DURHAM COLLIERIES (tons)		1,592,535		1,692,211		1,587,728	
OUTPUT PER PERSON UNDERGROUND (tons)		350		363		349	

(1) Dipton Colliery was closed (temporarily) in 1894.

(2) The Partners' return for 1892 does not give figures for those employed underground.

N.B. From 1892 onwards the totals given are the averages for the year concerned.

Men and boys employed at the Durham Collieries of
John Bowes & Partners, 1884-1914
 (underground)
 (3)

Colliery	1896		1897		1898		1899		1900	
	m	b	m	b	m	b	m	b	m	b
Marley Hill	392	34	391	36	383	39	380	29	367	25
Andrews House	149	10	145	13	144	8	133	10	134	8
Byermoor	200	21	202	29	207	28	206	32	207	31
Burnopfield	167	17	200	14	202	18	208	17	212	21
Dipton	NIL		NIL		NIL		NIL		204 9	
Pontop	227	22	230	19	232	23	241	25	231	25
Kibblesworth	229	19	236	18	224	18	239	20	234	23
Springwell	604	37	630	38	664	38	679	42	841	54
Wardley	582	28	584	30	602	33	592	33	576	36
Usworth (1)	1,021	26								
Felling	449	26	460	20	489	20	641	35	755	31
Dunston (2)	385	16	577	31	551	35				
TOTALS	4,405	256	3,647	248	3,698	260	3,319	241	3,761	263
SUM TOTAL	4,661		3,895		3,958		3,560		4,024	
OUTPUT OF DURHAM COLLIERIES (3)	1,794,842		1,568,125		1,616,807		1,455,007		1,489,515	
OUTPUT PER PERSON UNDERGROUND (tons)	385		403		408		409		370	

(1) Sold in 1897.

(2) The totals for Dunston in the period up to its sale in July 1899 are not included here.

(3) The figure for 1899 does not include the amount raised at Dunston up to July 1899.

(xlvi)

Men and boys employed at the collieries of
John Bowes & Partners, 1884-1914
 (underground)
 (4)

Colliery	1901		1902		1903		1904		1905	
	m	b	m	b	m	b	m	b	m	b
Marley Hill	402	28	425	29	433	26	422	27	434	33
Andrews House	132	6	142	8	139	5	132	8	156	4
Byermoor	227	28	247	22	278	20	266	21	276	22
Burnopfield	208	21	218	20	230	15	220	15	221	19
Dipton	190	17	246	11	240	15	218	9	175	7
Pontop	226	20	237	27	237	24	223	26	231	21
Kibblesworth	230	27	230	27	246	24	239	15	236	19
Springwell	731	49	773	44	792	41	746	36	738	35
Vale Pit	120	10	156	11	178	13	183	20	190	22
Wardley	571	35	570	30	603	19	506	21	576	23
Felling	733	57	776	39	813	50	770	42	684	47
TOTALS	3,770	298	4,020	262	4,189	252	3,925	240	3,917	252
SUM TOTAL	4,068		4,282		4,441		4,165		4,169	
OUTPUT OF COLLIERIES (tons)	1,502,998		1,543,491		1,628,828		1,594,119		1,636,347	
OUTPUT PER PERSON UNDERGROUND (tons)	369		360		389		383		392	

(xlix)

Men and boys employed at the collieries of
John Bowes & Partners, 1884-1914
 (underground)
 (5)

Colliery	1906		1907		1908		1909		1910	
	m	b	m	b	m	b	m	b	m	b
Marley Hill	463	26	469	27	491	34	559	53	608	56
Andrews House	165	10	177	14	192	10	182	30	191	22
Byermoor	279	25	288	24	292	29	348	22	318	28
Burnopfield	221	19	229	16	224	18	250	17	248	10
Dipton	147	9	133	13	143	7	128	8	176	8
Pontop	244	24	242	21	243	23	353	9	396	30
Kibblesworth	233	28	241	21	243	23	244	29	248	26
Springwell	763	36	750	37	759	41	767	21	798	25
Vale Pit	258	21	272	22	283	24	302	17	318	22
Wardley	581	52	581	16	598	6	590	-	600	10
Felling	743	45	803	59	831	73	735	50	741	70
Follonsby (sinking)			24	-	24	-	40	-	36	-
TOTALS	4,117	258	4,209	270	4,341	291	4,458	256	4,641	307
SUM TOTAL	4,375		4,479		4,632		4,714		4,948	
OUTPUT OF COLLIERIES (tons)	1,642,169		1,656,383		1,656,555		1,703,583		1,701,269	
OUTPUT PER PERSON UNDERGROUND (tons)	375		370		357		361		344	

(1)

Men and boys employed at the collieries of
John Bowes & Partners, 1884-1914
 (underground)
 (6)

Colliery	1911		1912		1913		1914	
	m	b	m	b	m	b	m	b
Marley Hill	630	54	636	61	672	46	530	59
Andrews House	206	22	209	16	210	7	148	8
Byermoor	331	23	339	29	332	26	307	27
Burnopfield	257	8	252	12	312	18	266	18
Dipton	160	7	243	7	353	27	351	35
Pontop	379	26	364	20	376	21	363	21
Kibblesworth	251	23	267	23	302	28	414	36
Springwell	829	36	823	36	900	53	776	25
Vale Pit	344	16	352	12	374	11	276	15
Wardley	605	-						
Follonsby	23	-	125	3	311	11	361	21
Felling	820	77	829	39	847	53	515	42
TOTALS	4,812	292	4,444	258	4,989	301	4,307	307
SUM TOTAL	5,104		4,702		5,290		4,614	
OUTPUT OF COLLIERIES (tons)	1,686,620		1,370,370		1,652,257		1,592,760	
OUTPUT PER PERSON UNDERGROUND (tons)	330		291		312		345	

(ii) Men and boys employed at the surface of the Durham Collieries, coke ovens, brickworks and railways of John Bowes & Partners, 1884-1914

Unit	1884		1885		1886		1887	
	m	b	m	b	m	b	m	b
<u>Collieries</u>								
Marley Hill	100	15	91	11	91	13	87	12
Andrews House	35	8	35	6	35	5	35	6
Byermoor	46	2	47	3	50	3	60	4
Burnopfield	70	2	64	2	64	2	68	1
Dipton	41	2	50	2	47	4	55	2
Pontop	64	5	59	5	56	8	65	3
Kibblesworth	54	4	56	4	58	5	55	6
Springwell	88	14	91	16	95	17	90	21
Wardley	115	25	136	39	99	30	143	31
Usworth	186	15	159	24	143	14	136	11
Felling	58	26	56	16	54	16	67	20
<u>Coke Ovens</u>								
Marley Hill	107	8	107	7	121	8	131	8
Byermoor & Crookbank	46	1	39	1	41	-	51	4
Burnopfield	29	2	13	1	14	-	28	2
Dipton	15	-	14	-	15	-	15	-
Pontop	63	3	39	1	34	3	76	-
<u>Brickworks</u>								
Marley Hill	14	3	14	2	16	2	16	4
Burnopfield	12	6	13	4	12	3	13	2
<u>Railways</u>								
Pontop & Jarrow	159	6	149	5	158	4	158	5
Usworth	6	-	Not included thereafter -					
Felling	5	3	presumably included with colliery.					
TOTALS	1,113	150	1,232	149	1,203	137	1,349	142
SUM TOTAL	1,263		1,381		1,340		1,491	

N.B. The Association did not ask for returns between 1888 and 1891. The figures given are as at 1st January of the year concerned.

Men and boys employed at the surface of the Durham Collieries,
coke ovens, brickworks and railways of John Bowes & Partners,
1884-1914
(2)

Unit	1892		1893		1894		1895	
	m	b	m	b	m	b	m	b
<u>Collieries</u>								
Marley Hill			61	26	98	19	44	18
Andrews House			25	4	25	5	22	7
Byermoor			34	4	42	5	36	4
Burnopfield			65	10	63	13	51	7
Dipton (1)			35	3	27	3	13	-
Pontop			35	3	47	5	39	5
Kibblesworth			48	2	49	3	43	4
Springwell			76	27	83	36	72	42
Wardley			74	29	89	25	82	33
Usworth	(4)		117	14	122	18	120	20
Felling			50	24	56	20	44	13
Dunston			25	13	32	13	40	8
<u>Coke Ovens</u>								
Marley Hill			62	-	66	-	63	-
Byermoor			47	-	43	-	41	-
Burnopfield			31	-	28	-	28	-
Dipton (1)			13	-	14	-	NIL	-
Pontop			33	-	29	-	46	-
<u>Brickworks (2)</u>								
<u>Railways (3)</u>								
Pontop & Jarrow			160		160		160	
TOTALS			994	155	1,073	165	646	160
SUM TOTAL			1,149		1,238		806	

N.B. The figures above are averages for the year concerned.

- (1) Dipton Colliery and Ovens closed in 1894, and only maintenance staff were employed until they were re-opened in 1900.
- (2) Brickworks are not separated from the collieries again until 1904.
- (3) The men working on the Pontop & Jarrow Railway were not subject to Coal Trade Regulations, and thus are not given on the return. The figures here are approximations.
- (4) No individual figures are given on the Partners' return for 1892.

Men and boys employed at the surface of the Durham collieries,
coke ovens, brickworks and railways of John Bowes & Partners,
1884-1914

(3)

Unit	1896		1897		1898		1899		1900	
	m	b	m	b	m	b	m	b	m	b
<u>Collieries</u>										
Marley Hill	85	17	70	12	71	14	84	11	91	13
Andrews House	23	5	26	5	24	6	22	6	25	5
Byermoor	42	4	42	4	49	5	47	6	44	4
Burnopfield	105	8	56	4	67	5	57	12	48	10
Dipton (1)	12	-	10	-	10	-	10	-	23	2
Pontop	43	5	47	4	58	4	48	5	40	2
Kibblesworth	48	2	42	2	47	4	50	4	52	4
Springwell	69	43	76	41	77	40	77	39	109	34
Wardley	93	36	91	33	81	39	99	33	96	36
Usworth	117	22								
Felling	81	20	54	20	57	19	48	18	49	17
Dunston (2)	41	9	45	17	38	15				
<u>Coke Ovens</u>										
Marley Hill	67	-	74	-	73	-	81	-	68	-
Byermoor	45	-	37	-	45	-	42	-	33	-
Burnopfield	27	-	25	-	34	-	37	-	32	-
Dipton	NIL		NIL		NIL		NIL		9	-
Pontop	50	-	53	-	45	-	49	-	20	-
<u>Brickworks (3)</u>										
<u>Pontop & Jarrow Rly</u>	165		165		165		165		165	
TOTALS	993	171	931	142	936	151	916	136	904	127
SUM TOTAL	1,164		1,073		1,087		1,052		1,031	

N.B. The figures for the Pontop & Jarrow Railway are approximate.

- (1) Only maintenance staff up to 1900.
- (2) The figures for January to July 1899 are not included.
- (3) No separate figure for men employed at brickworks is given on the returns.

Men and boys employed at the surface of the collieries,
coke ovens, brickworks and railways of John Bowes & Partners,

1884-1914

(4)

Unit	1901		1902		1903		1904		1905	
	m	b	m	b	m	b	m	b	m	b
<u>Collieries</u>										
Marley Hill	77	9	78	8	106	10	115	5	124	5
Andrews House	27	5	26	1	23	2	33	3	34	-
Byermoor	45	4	40	4	37	3	66	3	60	6
Burnopfield	60	14	68	7	63	7	77	3	70	4
Dipton	30	4	32	4	29	3	52	3	35	-
Pontop	44	2	52	2	47	6	66	2	68	2
Kibblesworth	54	3	54	-	53	4	65	2	62	4
Springwell	107	17	106	20	113	24	136	38	138	43
Vale Pit	14	5	26	6	31	1	30	3	35	4
Wardley	107	26	98	28	107	22	159	27	112	30
Felling	66	22	68	17	87	31	116	40	91	47
<u>Coke Ovens</u>										
Marley Hill	72	-	70	-	64	-	58	-	58	-
Byermoor	41	-	44	-	34	-	31	-	30	-
Burnopfield (1)	33	-	32	-	35	-				
Dipton (2)	15	-								
Pontop	36	-	23	-	16	-	18	-	18	-
<u>Brickworks</u>										
Burnopfield (3)							14	-	11	-
<u>Pontop & Jarrow Rly</u>	170		170		170		170		170	
TOTALS	998	112	987	99	1,015	113	1,206	129	1,116	145
SUM TOTAL	1,110		1,086		1,128		1,335		1,261	

N.B. The figures for the Pontop & Jarrow Railway are approximate.

(1) Closed in 1902.

(2) Closed in 1904.

(3) No separate figures are given before 1904.

Men and boys employed at the surface of the collieries,
coke ovens, brickworks and railways of John Bowes & Partners,

1884-1914

(5)

Unit	1906		1907		1908		1909		1910	
	m	b	m	b	m	b	m	b	m	b
<u>Collieries</u>										
Marley Hill	128	6	155	7	134	6	159	12	151	14
Andrews House	31	2	36	2	36	2	38	2	43	5
Byermoor	66	2	94	4	71	3	73	5	84	6
Burnopfield	69	3	57	2	63	2	57	5	69	3
Dipton	31	1	28	1	25	-	63	2	43	3
Pontop	66	3	62	4	66	4	71	4	87	4
Kibblesworth	62	-	69	2	72	1	72	1	78	1
Springwell	143	40	154	33	169	22	172	31	188	49
Vale Pit	32	8	47	3	46	9	50	9	66	27
Wardley	113	-	108	32	120	30	133	20	131	28
Felling	96	40	130	32	150	32	141	14	162	10
Follonsby (sinking)					32	-	24	-	23	-
<u>Coke Ovens</u>										
Marley Hill (1)	57	-	39	-	143	-	163	-	154	-
Byermoor	31	-	21	-	29	-	29	-	33	-
Pontop (2)	17	-	17	-	17	-				
<u>Brickworks</u>										
Burnopfield	8	-	8	-	8	-	7	-	5	-
<u>Pontop & Jarrow Rly</u>	175		175		175		175		175	
TOTALS	1,105	142	1,224	122	1,392	111	1,467	105	1,539	150
SUM TOTAL	1,247		1,346		1,503		1,572		1,689	

N.B. The figures for the Pontop & Jarrow Railway are approximate.

- (1) The bee-hive ovens closed in 1908, to be replaced by the new bye-product ovens.
- (2) These ovens closed about July 1909, but no figure is given on the return for that year.

Men and boys employed at the surface of the collieries,
coke ovens, brickworks and railways of John Bowes & Partners,
1884-1914.
(6)

Unit	1911		1912		1913		1914	
	m	b	m	b	m	b	m	b
<u>Collieries</u>								
Marley Hill	149	15	149	13	161	8	146	14
Andrews House	38	6	42	5	43	4	39	3
Byermoor	93	4	75	6	86	5	81	3
Burnopfield	65	5	67	5	81	6	83	4
Dipton	58	4	35	7	52	6	52	13
Pontop	79	4	80	4	80	1	78	-
Kibblesworth	78	3	86	4	89	5	81	10
Springwell	197	19	223	20	204	23	170	36
Vale Pit	67	31	71	28	62	29	50	22
Wardley (1)	119	38						
Follonsby	24	-	75	7	121	21	113	36
Felling	128	22	138	32	140	39	140	30
<u>Coke Works</u>								
Marley Hill	188	-	190	-	195	-	177	-
<u>Brickworks</u>								
Burnopfield	3	-	2	-	-	-	1	-
<u>Pontop & Jarrow Rly</u>	175	-	175	-	175	-	175	-
TOTALS	1,484	151	1,408	131	1,489	147	1,386	171
SUM TOTAL	1,635		1,539		1,636		1,557	

N.B. The figures for the Pontop & Jarrow Railway are approximate.

(1) Closed in 1911.

(iii) Aggregate figures for all men and boys employed
in Durham by John Bowes & Partners,
1884-1914
(1)

Unit	1884		1885		1886		1887	
	m	b	m	b	m	b	m	b
Marley Hill	448	65	455	62	477	74	469	83
Andrews House	129	15	130	14	129	14	139	14
Byermoor & Crookbank	198	28	188	31	202	23	259	29
Burnopfield	262	42	238	37	239	33	272	31
Dipton	217	15	276	15	233	14	247	11
Pontop	304	38	286	33	273	27	337	26
Kibblesworth	246	31	242	30	253	30	263	30
Springwell	434	44	429	56	404	44	482	49
Wardley	611	58	836	73	494	104	680	47
Usworth	869	63	865	91	800	57	881	37
Felling	391	44	296	21	292	56	398	50
Pontop & Jarrow Rly	159	6	149	5	158	4	158	5
TOTALS	4,068	442	4,400	469	3,954	479	4,566	412
SUM TOTAL	4,510		4,869		4,433		4,978	

Aggregate figures for all men and boys employed
in Durham by John Bowes & Partners,
1884-1914.
(2)

Unit	1892		1893		1894		1895	
	m	b	m	b	m	b	m	b
Marley Hill	467	58	497	55	511	61	495	63
Andrews House	159	12	163	19	161	20	164	15
Byermoor	269	30	266	29	266	31	261	30
Burnopfield	286	31	283	27	281	30	274	23
Dipton (1)	256	19	251	23	226	19	13	-
Pontop	281	27	256	27	259	29	273	27
Kibblesworth	283	27	274	24	281	19	282	17
Springwell	633	66	608	73	680	76	645	73
Wardley	726	63	548	54	708	56	689	77
Usworth	818	64	871	62	1,011	66	1,081	64
Felling	662	57	613	52	463	42	492	34
Dunston	467	48	418	42	411	27	381	18
Pontop & Jarrow Rly	160	-	160	-	160	-	160	-
TOTALS	5,467	502	5,211	484	5,418	476	4,912	441
SUM TOTAL	5,969		5,695		5,894		5,353	

N.B. The figures for the Pontop & Jarrow Railway are approximate.

(1) Closed temporarily in 1894.

Aggregate figures for all men and boys employed
in Durham by John Bowes & Partners,
1884-1914
(3)

Unit	1896		1897		1898		1899		1900	
	m	b	m	b	m	b	m	b	m	b
Marley Hill	544	51	535	48	527	53	545	40	526	38
Andrews House	172	15	171	18	168	14	155	16	159	13
Byermoor	287	25	281	33	301	33	295	38	284	35
Burnopfield	299	18	281	18	303	26	320	29	292	31
Dipton	12	-	10	-	10	-	10	-	236	11
Pontop	320	27	330	23	335	27	338	30	291	27
Kibblesworth	277	21	278	20	271	22	289	24	286	27
Springwell	673	80	706	79	741	78	756	81	950	88
Wardley	675	64	675	63	683	72	691	66	672	72
Usworth	1,138	48								
Felling	530	46	514	40	546	39	689	53	803	48
Dunston	426	25	622	48	587	50				
Pontop & Jarrow Rly	165	-	165	-	165	-	165	-	165	-
TOTALS	5,398	427	4,588	390	4,634	411	4,235	377	4,665	390
SUM TOTAL	5,825		4,978		5,045		4,612		5,055	

N.B. The figures for the Pontop & Jarrow Railway are approximate.

(1x)

Aggregate figures for all men and boys employed by
John Bowes & Partners,
1884-1914
(4)

Unit	1901		1902		1903		1904		1905	
	m	b	m	b	m	b	m	b	m	b
Marley Hill	551	37	573	37	603	39	595	32	616	38
Andrews House	159	11	168	9	162	7	165	11	190	4
Byermoor	313	32	331	26	349	23	363	24	366	28
Burnopfield	301	36	318	27	328	22	311	18	302	23
Dipton	236	22	278	15	269	18	270	12	210	7
Pontop	306	22	312	27	300	30	307	25	317	23
Kibblesworth	284	30	284	27	299	28	304	17	298	23
Springwell	838	66	879	64	905	65	882	74	876	78
Vale Pit	134	15	182	17	209	14	213	23	225	26
Wardley	678	61	668	58	710	41	665	48	688	53
Felling	799	79	844	56	900	81	886	82	575	94
Pontop & Jarrow Rly	170	-	170	-	170	-	170	-	170	-
TOTALS	4,768	410	5,007	361	5,204	365	5,131	369	5,033	397
SUM TOTAL	5,178		5,368		5,569		5,500		5,430	

N.B. The figures for the Pontop & Jarrow Railway are approximate.

Aggregate figures for all men and boys employed by
John Bowes & Partners,
1884-1914
(5)

Unit	1906		1907		1908		1909		1910	
	m	b	m	b	m	b	m	b	m	b
Marley Hill	648	32	663	34	768	40	881	65	913	70
Andrews House	196	12	213	16	228	12	220	32	234	27
Byermoor	376	27	403	28	392	32	450	27	435	34
Burnopfield	298	22	294	18	295	20	314	22	322	13
Dipton	178	10	161	14	168	7	191	10	219	11
Pontop	327	27	321	25	368	30	424	13	483	34
Kibblesworth	295	28	310	23	315	24	316	30	326	27
Springwell	906	76	904	70	928	63	939	52	986	74
Vale Pit	290	29	319	25	329	33	352	26	384	49
Wardley	694	52	689	48	718	36	723	20	731	38
Felling	839	85	933	91	981	105	876	64	903	80
Follonsby (sinking)			24	-	34	-	64	-	59	-
Pontop & Jarrow Rly	175	-	175	-	175	-	175	-	175	-
TOTALS	5,222	400	5,433	392	5,733	402	5,925	361	6,180	457
SUM TOTAL	5,622		5,825		6,135		6,286		6,637	

N.B. The figures for the Pontop & Jarrow Railway are approximate.

Aggregate figures for all men and boys employed by
John Bowes & Partners,
1884-1914
(6)

Unit	1911		1912		1913		1914	
	m	b	m	b	m	b	m	b
Marley Hill	967	69	975	74	1,082	54	853	73
Andrews House	244	28	251	21	253	11	187	11
Byermoor	424	27	414	35	418	31	388	30
Burnopfield	325	13	321	17	393	24	350	22
Dipton	218	11	278	14	405	33	403	48
Pontop	458	30	444	24	456	22	441	21
Kibblesworth	329	26	343	27	391	33	495	46
Springwell	1,026	55	1,051	56	1,104	76	946	61
Vale Pit	411	47	423	43	436	40	326	37
Wardley	724	38						
Follonsby	47	-	200	10	432	32	474	57
Felling	948	99	967	71	987	92	655	72
Pontop & Jarrow Rly	175	-	175	-	175	-	175	-
TOTALS	6,296	443	5,852	389	6,478	448	5,693	478
SUM TOTAL	6,739		6,241		6,926		6,171	

N.B. The figures for the Pontop & Jarrow Railway are approximate.

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(a) MSS sources

(i) County Record Office, County Hall, Durham.

Durham Coal Owners Association, Statistical Returns

These take the form of questionnaires sent to and received from members of the Association, and subsequently bound in volumes. Usually a reply is received from all members; occasionally from only a sample. Numbers given below refer to volume numbers. Some volumes are missing.

<u>Year</u>	<u>Coal output</u>	<u>Coke output</u>	<u>Men and boys employed</u>
1871	18	no return made	no return made
1872	19	19	"
1873	51	51	"
1874	73	73	"
1875	89	89	"
1876	missing	missing	"
1877	115	115	"
1878	127 /	127 /	"
1879	156	*	"
1880	220	*	"
1881	245	*	"
1882	246	*	"
1883	247	*	254
1884	258	257	260
1885	270	271	272
1886	284	missing	missing
1887	288	290	287
1888	missing	} 290B	missing
1889	missing		missing
1890	missing		missing

/ The Partners' return is missing from this volume.

* No returns were asked for between 1879 and 1883, but the output for 1880 is quoted in Vol. 361A.

1891	missing)	missing
1892))	358A
1893)	359)
1894) 357)) 358
1895)))
1896	397	407	402
1897	398	408	403
1898	399	409	404
1899	400	410	405
1900	401	411	406
1901	453	443	441
1902	482	481	482
1903	501	503	501
1904	526	528	526
1905	540	539	540
1906	555	559	555
1907	577	580	577
1908	586	587	586
1909	595	598	595
1910	612	614	612
1911	627	626	627
1912	651	650	651
1913	673	672	673
1914	685	684	685

Other miscellaneous returns consulted

<u>Vol. No.</u>	<u>Title</u>	<u>Date of return</u>
22	Men and boys' hours	3/1873
55	Cottages connected with collieries	3/1874
66)	(Wages paid to bricklayers and other workmen at collieries, quarries, coke ovens and railways	11/1874
67)		
74	Applications for work at collieries	2/1875
82)	(Number of men discharged during last three months, number of men under notice, etc	12/1875
83)		
105	Number of men in Miners and Deputies' Union	1/1877
134	Pits idle or laid in through depression of trade since January 1875	5/1879

157	Cokemen's wages and prices, weight of loads, price per set and other particulars	1/1880
248	Number of hewers using safety lamps	12/1882
257	Coke - number and size of ovens	1/1885
271	Coke - number and size of ovens	1/1886
296	Cokemen, number of ovens, coal put in, light and heavy loads, prices and days worked	11/1889
297	Coke ovens drawn per man per day	12/1889
300	Coal drawing hours	1/1890
303	Hours before Meynell's Award of 1890	8/1890
321	Coal - quantity used for coke, gas, steam and household	5/1892
325	Number of workmen discharged through want of trade	2/1893
327	Number of pits still idle	3/1893
332	Coal sold during July and August 1892 and 1893	9/1893
333	Coal sold during August and September 1892 and 1893	10/1893
342	Coal sold inland, for bunkers, export Number of coke ovens in operation	4/1895
361	Coke ovens in operation: number of days pit worked	7/1895
361A	Cost of converting coal into coke in 1880, 1887 and 1894	9/1895
377	Coal shipped in the Tyne, 1897	3/1898
388	Number of boys under 14 employed in Durham and Northumberland	3/1900
394	Houses, rent and coal supplied to men at brickworks	8/1900
429	Coal and coke exported foreign during 1900	/1901

498	Boys - number employed before 6am and after 9pm under 14	12/1903
516	Colliery schools - replies regarding transfer to County Council	6/1904
566	Cokemen on gullet ovens	4/1906
567	Coal cutting machines - wages, duties and hours of machinemen	12/1905
602	Stoppages caused by system of working adopted under Eight Hours Act	1/1910
603	Eight Hours Act - number of persons employed in each shift	3/1910
610	Details of shifts under Eight Hours Act	/1910
615	Coal-drawing hours and number of men in each shift	2/1911
616	Night shift working in various districts	4/1911
623	Coal Mines Bill, 1911 - cost of providing separate travelling roads	4/1911
676	Bye-product ovens - Sunday work	1/1914
680	Houses and wages of persons employed at washeries and crusheries	4/1913
732	Possible re-instatement of bee-hive ovens	12/1916
The following returns deal with the General Strike of 1892		
316	Notices - number given by workmen and owners	2/1892
317	Number of men at work	2/1892
318	Disturbances and police protection	3/1892
319	Number of men at work, risks to collieries	4/1892
322	Dates when work was resumed after strike	6/1892
329A	Statistics of General Strike, 1892	3/1893

The Durham Coal Owners Association Collection also includes the volumes of Accountants' Certificates compiled for the Association and the Durham Miners' Association giving the average selling price of all types of Durham coal at stated intervals, latterly every three months. These volumes are : Vol. I, 1871-1900, Vol. II, 1901-1913 and Vol. III, 1914.

Strathmore Collection

This collection was acquired by the Record Office in 1965. It consists of approximately 100 large boxes, none of which have yet been sorted, listed or catalogued, nor is there any immediate hope of this being done. It is thus almost impossible to quote references for material in it.

Amongst the boxes are a number containing the majority of letters written to John Bowes, with a few of his replies. These boxes are at present (December 1966) sorted as follows:

1833 - 1844	Box 1 (my own numbering)
1845 - 1851	Box 2
1852 - 1860	Box 3
1861 - 1872	Box 4
1873 - 1878	Box 5
1882 - 1883	Box 6

No letters for 1879 - 1881 or 1884 - 1885 have yet been found. With the exception of the first and last boxes, each box is believed to contain approximately 1,000 letters.

In addition to these boxes, two others have been used, the first labelled "Colliery papers", referred to as Box 7, and another labelled "Personal correspondence", or Box 8. This last does not contain any of John Bowes' letters, but mainly letters between the solicitors of John

Bowes and Lord Strathmore and letters to Lord Strathmore between 1885 and 1887.

The contents of the remaining boxes in the Collection are not yet known.

(ii) Bowes Museum, Barnard Castle.

The Museum has a fairly large collection of letters written by John Bowes, mostly to his solicitors at Barnard Castle and his land agents, though there are a few letters written by the Dowager Countess of Strathmore and William Hutt. This Collection has also not been sorted, catalogued or properly listed, though an incomplete index of the letters has been made privately by a resident of Barnard Castle. These letters are also in boxes, as follows

1818 - 1835	Box 1 (my own numbering)
1836 - 1840	Box 2
1841 - 1844	Box 3
1845 - 1849	Box 4
1850 - 1854	Box 5
1855 - 1860	Box 6
1861 - 1869	Box 7
1871 - 1876	Box 8
1877 - 1881	
1884 - 1885	Box 9

The letters from Lady Strathmore, 1830 - 1850, from William Hutt, 1833 - 1857 and from C. Tennant, 1836 - 1837, are in Box 10. No letters are extant from Bowes between August 1869 and October 1871, when he was in England, or for 1882 and 1883.

Copies of the Minutes of the meetings of the Trustees of the Bowes Museum have also been consulted.

(iii) Northumberland Record Office, Gosforth.

Northumberland Coal Owners Association, Statistical Returns

These are similar to the Durham Returns, but the Collection prior to 1900 is very incomplete, and has not yet been catalogued. The only known volumes containing coal output figures up to 1900 are:

<u>Year</u>	<u>Vol. No.</u>
1873	17
1896	193
1897	195
1898	196

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(b) Printed sources

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