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THE ROWLEY HALL COLLIERY, ROWLEY REGIS, STAFFS

by Nigel Chapman

INTRODUCTION

From Sedgley to Rowley Regis, a low range of hills stretches in a south easterly direction across the Black Country and forms a marked feature of the landscape when viewed either from the Stourbridge or Wolverhampton sides. Created by the intrusion of a basalt dyke, these hills were known to have cut through the coal and limestone measures. South of the basalt dyke the land slopes to form a wide shallow valley containing the town of Oldbury. To the west of the town, there was a large lake, known as the Titford Pool, which used to supply the Birmingham to Wolverhampton Canal. This had been constructed in the 1770s to improve the transport of goods, especially coal, into Birmingham. Soon collieries were opened and tramways laid along the south side of the canal in the parish of Oldbury. A survey made in 1835 for a proposed branch 'cut' to the Titford Pool shows four collieries, but once this construction was completed in 1837 the sinking of shafts and the construction of tramways all the way to the Pool was undertaken and tramways, steam winders and wooden head frames, together with the debris of coalmining, dominated this once green valley in the parish of Oldbury.

Collieries which developed towards 1850 were located on the higher ground to the north, thus requiring deeper shafts and risking encounters with the basalt rock instead of the coal measures. On the plus side, the basalt was of

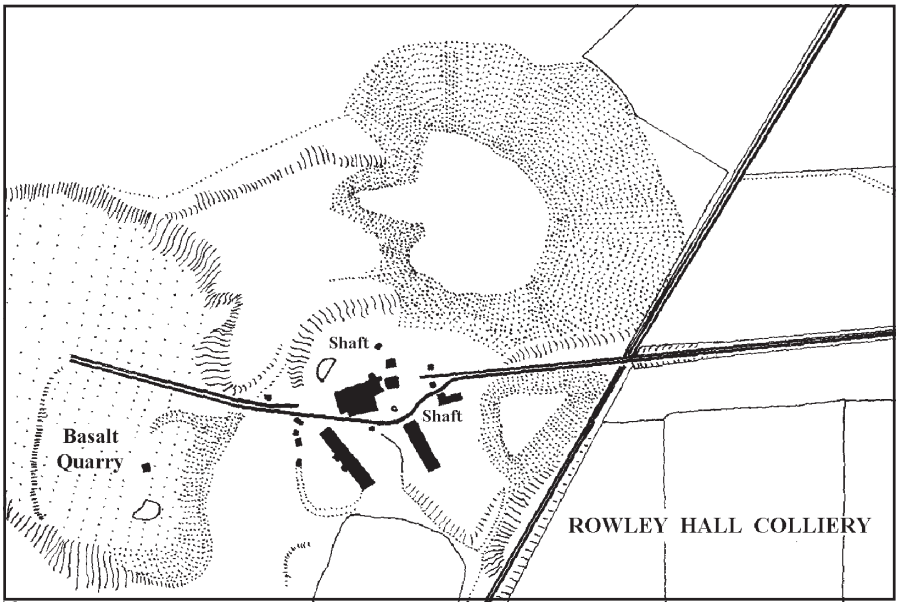

Fig.1 Surface layout of Rowley Hall Colliery, Rowley Regis. SO974875.

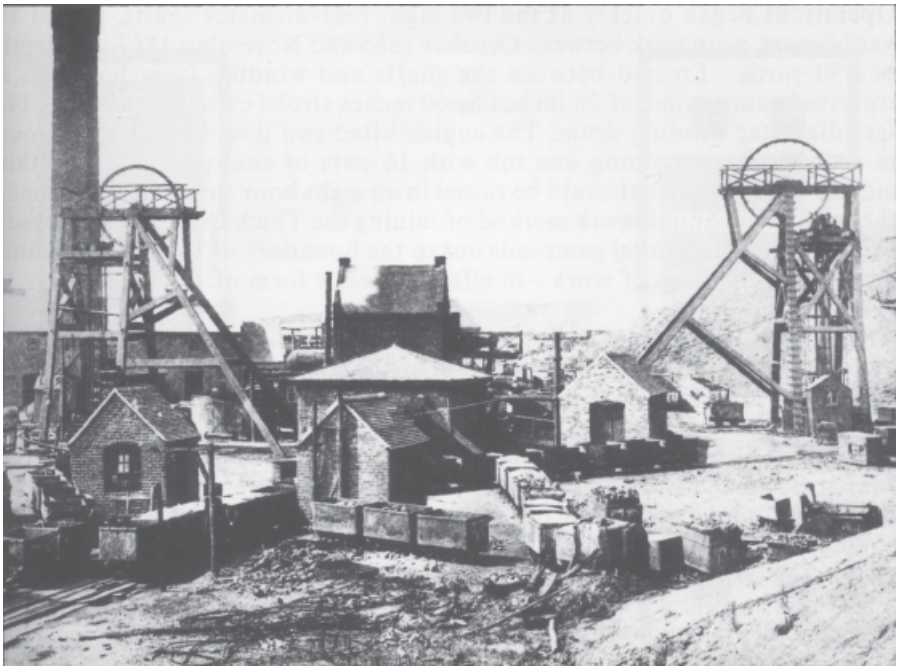

Plate I: Rowley Hall Colliery, Rowley Regis. SO974875.

good quality for road making and had already been quarried to a small extent. On the higher slopes of the Rowley Hills, the Earl of Dudley sank his Ramrod Hall Colliery about 1855 and located the Thick Coal at a depth of 567 feet or 189 yards. The Thick Coal proved to be 25 feet thick, of good quality and free from the effects of the basalt dyke. (It had been feared that the molten basalt would have migrated in the fissures of the strata and reached into the coal measures to char areas into coke, but fortunately the basalt had had less effect on the coal seams then expected and had left only localised areas of burnt coal.)

On September 29th 1865, the Rev. William Alexander Newman, of Canterbury, Kent, leased 47 acres of coal, ironstone and basalt (if found) lying under his estate of Rowley Hall in Rowley Regis, Staffordshire, to Wright and North, coalmasters. Brothers David and William North, of Dudley, and Edwin Arthur Wright, of Rowley Regis, were partners in the concern that leased the minerals for 35 years. For the first year a peppercorn rent was demanded, but after that the rent was £1,000 per year for every two acres of coal worked or not. Payment was to be at the rate of £250 per quarter, plus £500 per acre for any further workings in one year, and a clause in the lease permitted the construction of a tramway down the hillside to the canal near the Titford Pool, allowing the output from the colliery to be hauled by barge into Birmingham.

Operations began quickly as the two eight-foot-diameter shafts, placed 35 yards apart, were sunk between October 1865 and November 1867 to a depth of 230 yards. Erected between the shafts and winding from both was a rotative beam engine, of 28 inches by 60 inches stroke cylinder, driving a 14-feet-diameter winding drum. The engine lifted two double-deck cages, one in each shaft, containing one tub with 16 cwts of coal per deck. By this means, 650 tons of coal could be raised in an eight hour shift. Underground, the traditional Squarework method of mining the Thick Coal was employed, driving pairs of parallel gateroads out to the boundary of the royalty before developing the sides of work - in effect, an early form of retreat mining.

Areas of the Thick Coal with bands of shale or basalt were also worked by a form of Longwall. The upper section of the coal was extracted by creating gate roads to cut the coal into blocks. These were then Longwalled. After the workings had settled, the lower section was extracted using the same methods. During this phase, a basalt dyke was located cutting through the coal seam to the west of the shafts. Gate roads were driven through the dyke and found the coal on the other side. One item noted was the slight coking of the coal in contact with the basalt. In other locations, notably in the Dudley area, such intrusions had destroyed large areas of the coal.

During 1868, Isaac Downing leased 23 acres of the Thick Coal to the south of the colliery to Messrs Wright and North for a term of 28 years at a cost of £11,350, increasing the royalty of the colliery to 70 acres. While driving gate roads in the royalty during 1871, some recent workings were found along the boundary with Joseph Hackett, leading to a claim for 900 yards of missing coal being lodged against Isaac Downing, with Wright and North demanding a lower rental. After a series of negotiations, the boundary line was redrawn by Mr Smallman, an independent mining engineer, so that Joseph Hackett lost 900 yards of unworked coal and paid £93 costs.

By 1875, various of David North's activities had strained his resources until he owed a debt of £1,000 to the partnership. He mortgaged his share of the colliery to Lloyd's Banking Co. until he could repay the money or the mining lease ended and, for our purposes, he disappears from the story.

Early in the life of the colliery, an endless chain system of underground tub haulage was installed. While this was not the first such system to be put into a Black Country colliery, it was one of the few existing at this period and created enough interest for the South Staffordshire and East Worcestershire Institute of Mining Engineers to pay a visit during the summer of 1876. On the surface was a 16 horse power steam engine which drove a chain down the side of the Downcast shaft to operate an endless chain along the main haulage road. Loaded tubs were clipped on to the moving chain and hauled to the shaft bottom. On the surface, the same engine operated a 1600-yard long endless chain system at a slight downhill gradient to the canal wharf near Oldbury, delivering 650 tons of coal per day to the waiting canal boats.

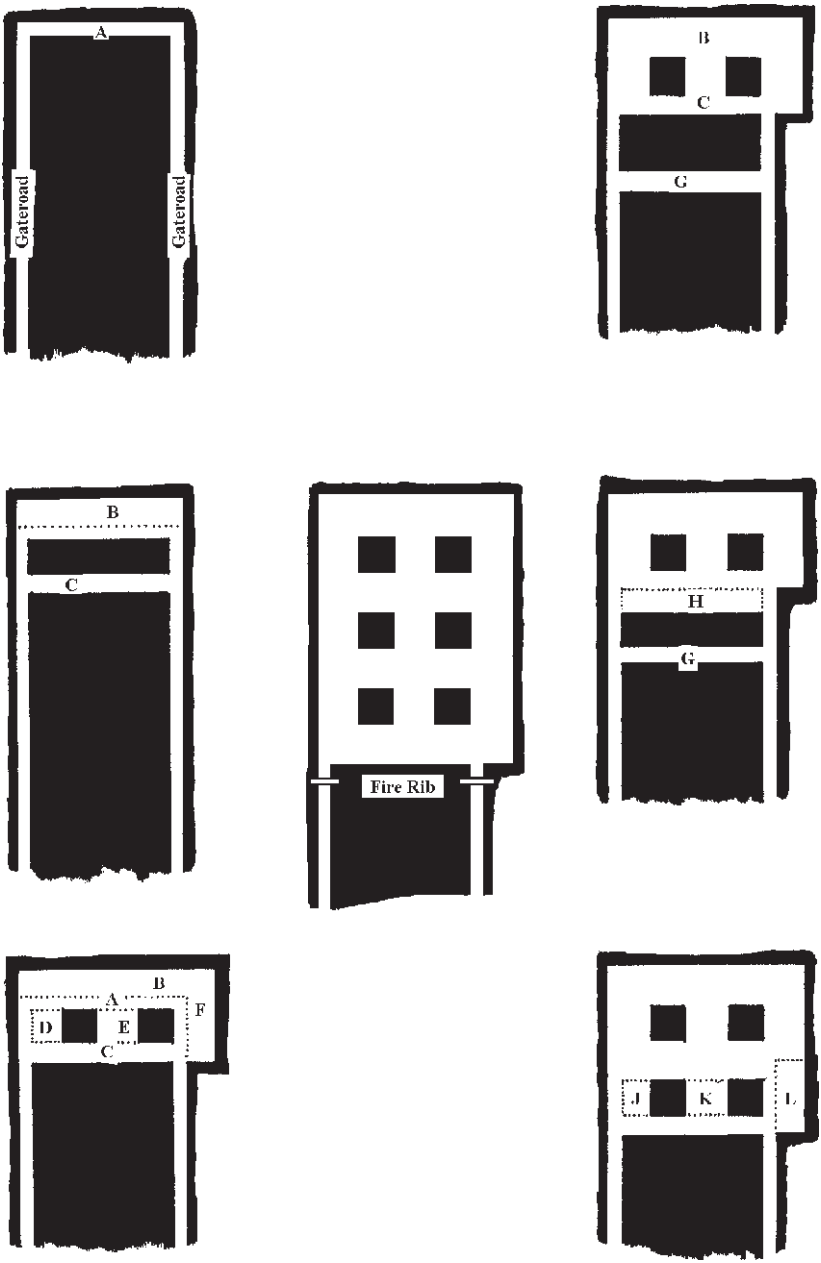

Fig.2 Method of working the Staffordshire Thick Coal.

The company had also opened a quarry in the basalt known as “Rowley Rag”, and a branch of the haulage system delivered the tubs of rock to the canal wharf. With 80 men employed in the quarry, an output of 200 tons of basalt was produced each day and sent by canal to surface the roads of the area.

Mining of the Thick Coal continued until, by 1892, little unworked coal remained and in places some had already been worked again to remove the ribs and pillars. Wright and North sold the rest of the lease to Messrs Bassano, Son and Hawkes, who were working collieries in the Oldhill area to the west. They decided to deepen the shafts to the White Ironstone seam and acquired the lease of 60 acres of unworked Thick Coal. The new areas of coal needed new gate roads to be driven in the White Ironstone seam, eight yards below the collapsed Thick Coal workings. To speed up the driving, Maedermott’s Perforator drill was used, with gelignite and compressed powder as explosives. By these means, a rate of 20 to 25 yards of driving per week was achieved in each gate road. Once this task was completed, the new company worked the 60 acres of coal by Longwall methods in two sections. It was estimated that the area would produce, at 25 feet thickness and allowing one-eighth for loss in working, about 32,800 tons per acre or a total of around 2,000,000 tons of coal. Based on other statements of around 17,000 tons per acre from the Thick Coal seam, this seems very optimistic.

In 1903 Messrs Bassano, Son and Hawkes sold out to the Titford Colliery Co., who worked the remaining Thick Coal seam until final closure at the end of the First World War in 1918.

STAFFORDSHIRE SQUARE WORK METHOD OF COAL EXTRACTION

With a coal seam of the thickness of 30 feet or 10 yards, a method of mining unique to the area was developed. It was based on the standard Bord and Pillar method, but modified until the pillars became small and the bords huge.

Apart from its thickness, two further conditions were imposed by the seam. The first was that the coal was liable to outbreaks of spontaneous combustion, so each chamber was designed to be scaled off from the mine to smother such outbreaks. The second was that the workings were subject to localised earthquakes, known in the area as “Bumps”. It was believed that the soft clay immediately beneath the Thick Coal relieved the pressure built up by exploding into the workings. Bumps were known from the early days of mining, but, because of the greater pressure, were more frequent and destructive in the deeper mines. Hamstead Colliery had an unenviable reputation for the severity and destructive nature of these earthquakes and Sandwell Park appears to have suffered its share of these bumps over the years. With the sinking of the Jubilee Colliery to a deeper level, they became more severe. The worst example occurred following abnormal weightings

towards the end of December 1919 and culminated in a bump which caused the deaths of two miners and the severe injury of another in January 1920.

Much criticized by H.M. Inspectors of Mines for the heavy toll of life lost by falls in the Sides of Work, the Staffordshire Square Work method lasted to the end of the coalfield in 1962. In the smaller collieries, it was used in a haphazard fashion, without the refinements of survey work, but the classic examples of Square Work were to be found in the larger collieries, of which Sandwell Park and Hamstead were the leaders.

DRIVING GATEROADS

After the shafts had been sunk and the pit bottom had been developed to suit the expected output, the next operation was to drive a series of gateroads out to the boundary of the royalty to be worked. Two gateroads, each about three yards wide by about two yards high, were driven with the Benches, Slipper and Sawyer bands extracted. Cutting then
began in the Benches band, forming the top taken away in this part of the work. This was then undercut for a distance of about 15 feet and supported on short timbers called punchions. Two or three pikemen would then cut vertical grooves through the hanging coal at distances of about six feet, measuring from the rear of the undercutting and leaving several ribs of coal to support the hanging mass. These ribs were known as spurns and it was a matter of judgment by the pikeman as to the number and situation of these supporting ribs.

Once the Slipper and Sawyer coals had been cut through on at least one side, if not both, the spurns were reduced in size with a pick (known as a pike in South Staffordshire) and finally removed from a safe distance with a long handled pricker, which was a tool very similar to a boat hook. A single spurn was always left at the face and, when this was removed, the hanging mass would drop by its own weight. If it did not drop, however, some black powder would be put into a shot hole to help.

Timbers were set to support the new roof and the fallen coal was loaded into tubs and taken to the shaft bottom. After this, the sides of the gateroad were cut straight and timber was set as considered necessary. In Sandwell Park Colliery, the coal was of a soft nature and so the gateroads had a life of months rather than years. Because of this problem, the gateroads were driven with the Sawyer as the floor and the Brazils as the roof, with the Slipper, Sawyer and Benches being left underfoot in the gateroad to prevent the risk of creep.

Two parallel gateroads, 33 yards apart, were driven towards the boundary to form the main haulage roads of that area. As the driving advanced, other gateroads were turned off at regular intervals and driven towards the royalty boundary.

CREATING SIDES OF WORK

Once the boundary was reached, a rib of coal was left to protect the workings from the activities of the neighbouring colliery and then the development of the Sides of Work began.

First, a cross measures drift was cut between the parallel gateroads. Once completed, this was widened, or side lined, to a maximum of 10 yards. As this operation was under way, a second cross measures drivage, about five yards wide, was started to cut off a block of coal eight yards wide. All these operations were carried out in the lower six to ten feet of the seam.

At this stage the gateroads were side lined to a width of 10 yards (D and F). A further drivage east, of 10 yards wide, was put through the remaining block of coal to create two pillars of coal, each eight yards square with openings of 10 yards wide on three sides and an opening of five yards on the other.

When these operations had been completed, the dropping of the upper measures began. At the same time, a further cross measures opening (G) was cut in the coal, cutting off a rib 13 yards wide. The purpose of this was to permit the opening C to be subsequently side lined to 10 yards wide by cutting a slice of five yards off the 13 yard block, leaving an eight-yard thick pillar. The top coal in the back opening (B) was taken down in sections, with slice after slice being removed vertically. Areas of the back opening were then worked, the size of the area taken down depending on the strength of the roof. If the coal was soft and friable, then only small areas were cut and dropped, but, where the roof was strong, large areas of up to several hundred tons would be cut and dropped. As with the gateroads, the upper measures were grooved and spurns, aided by timber props, supported the coal to protect the colliers. Once the grooves were complete, or sometimes before, the coal was dropped, loaded into the tubs and removed. The same operations were then repeated through the succeeding measures to extract the full height of the seam.

While these operations were going on in the lower measures along the back rib, a five- yard-wide side lining (H), five yards wide, was taken off and the two gateroads widened to 10 yards. When a 10-yard-wide opening (K) was driven across to create two pillars, the Side of Work would have consisted of four pillars. In the openings B, D, E and F, the Veins and Fine coal measures were cut and dropped, followed by the Brazils. In the back opening, a further cross measures drivage was made at a distance of 13 yards from G. These openings were then side lined to 10 yards in width until the Side of Work consisted of six pillars of eight yards square, surrounded on all sides by openings of 10 yards wide.

In the last opening, nearest to the fore rib, only the lower measures had as yet been removed, while along the back rib and over the greater part of the

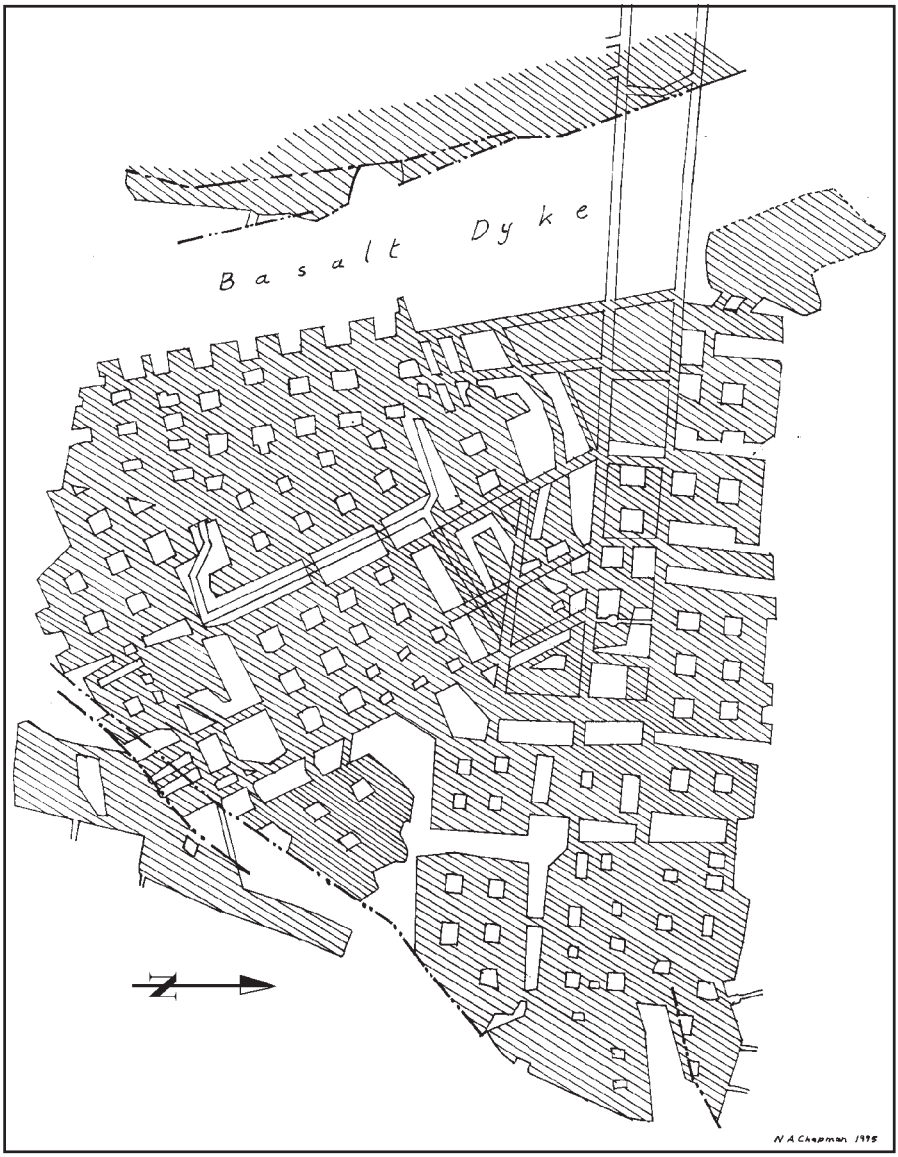

Fig.3 Plan of workings at Rowley Hall Colliery. Levels driven through the basalt into the Thick Coal Seam and workings.

chamber most of the coal had been removed. In fact, the roof would probably have fallen along the back rib and stopped operations. The upper measures along the fore rib would now be cut and dropped in ascending order around the two pillars. When cutting and dropping the upper measures, it was usual

to work up to the White Coal measure, as cutting any higher meant that the roof shales were brought down, leading to problems of having to sort the dirt from the coal. Sometimes, after the White Coal had been cut and removed, the higher measures of the Roofs and Spires would fall without bringing down the roof shales, and this coal was loaded up and removed. If a bad roof fall occurred while working a Side of Work, it usually proved almost impossible to timber and rework the chamber because of the height.

When all the remaining coal was cleared away from the Side of Work, the last opening, or bolt hole, was blocked off with a thick brickwork stopping to prevent the development of spontaneous combustion. Operations were then completed on this Side of Work, but nearby the next one was probably already being developed and the process repeated. At the end of the 19th century, eight Sides of Work were being worked at any one time at Sandwell Park, giving an output of about 1,000 tons per day. It was considered important to have enough work available, but not to have workings standing because of the risk of spontaneous combustion. When the coal had been worked once, much was left to be reworked again and again. Sometimes as many as four reworkings are known to have taken place, because of the large amount of small coal left in the mine. Such reworkings continued until spontaneous combustion broke out and forced the abandonment of mining.

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Paper submitted – January 12th 1999:

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OUTPUT OF ROWLEY HALL COLLIERY

			Coal	Slack	Fine Coal	Total
January	5	1897	766.75	1675.00	1046.00	3487.75
January	12	1897	794.45	1767.55	804.30	3366.30
January	19	1897	707.10	1438.10	833.60	2978.80
January	26	1897	552.55	1460.85	1024.85	3038.35
February	2	1897	587.20	1557.60	914.35	3053.15
February	9	1897	687.30	1689.00	682.90	3059.20
February	16	1897	586.30	1569.60	738.50	2894.40
February	23	1897	519.85	1228.00	657.60	2405.45
March	2	1897	620.45	1282.30	531.95	2434.70
March	9	1897	709.05	1285.15	609.45	2603.70
March	16	1897	637.60	1293.75	693.60	2624.95
March	23	1897	695.80	1384.10	733.20	2813.10
March	30	1897	586.75	1253.55	653.60	2493.90
August	18	1897	647.20	1124.70	460.55	2232.45
August	25	1897	724.70	1292.45	554.35	2567.40
September	1	1897	869.95	1545.05	627.50	3042.50
September	8	1897	936.30	1491.70	616.70	3044.70
September	15	1897	482.50	936.45	382.80	1801.75
September	22	1897	660.70	1246.55	521.75	2429.00
September	29	1897	831.00	1426.80	694.45	2952.25
October	6	1897	765.00	1451.20	605.20	2821.40
October	13	1897	656.85	1220.25	576.00	2453.10
October	20	1897	791.40	1376.70	641.70	2809.80
October	27	1897	687.10	1136.65	485.60	2309.45
November	3	1897	627.35	1283.00	585.50	2495.85
November	10	1897	802.75	1665.65	754.45	3222.85
November	17	1897	850.70	1752.40	805.20	3408.30
November	24	1897	751.05	1559.40	716.10	3026.45
December	1	1897	833.15	1754.70	708.20	3296.05
December	8	1897	954.60	1671.45	755.90	3381.95
December	15	1897	956.95	1572.65	758.80	3288.40
December	22	1897	869.40	1727.85	593.95	3419.20
December	29	1897	380.45	675.65	411.50	1467.60
January	5	1898	766.75	1675.00	1046.00	3487.75
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