A RAMBLE 'ROUND OLD BIRMINGHAM

> One has no great hopes from Birmingham. I always say there is something direful in the sound.[1]

The World's Toyshop

Birmingham, Brummagem, Bromwicham, Brymingham, Bermingeham... . Spell it or say it however you please, there is something queer about the place. Even before the canal boom it managed to become England's pre-eminent industrial city, and was well on its way to becoming the "the workshop of the world." Yet it was located far from sources of the principal raw materials—especially copper and zinc—that most of its manufacturers relied upon; and transport was a problem, since it was also a good distance from any port or navigable river. The place didn't even have all that many streams capable of being reliable sources of power for its hammers and rolling mills.

How, under the circumstances, did Birmingham manage to attract and to breed such a disproportionate share of Great Britain's outstanding entrepreneurs, inventors, and skilled artisans? Why, in particular, did it—and not London or Bristol or Sheffield—become Great Britain's leading center for all kinds of metal work, including commercial coinage? Although numismatists have had plenty to say about the tokens and other numismatic products made there, they've had relatively little to say about the town itself, and the mints it nurtured.

Soho, of course, has gotten plenty of attention from numismatists. Yet the Soho mint was the only important commercial mint that *wasn't* located in Birmingham (though it was just a stone's throw away). In other respects also the Soho mint was hardly

[1] Mrs Elton, in Jane Austen's *Emma* (1815).

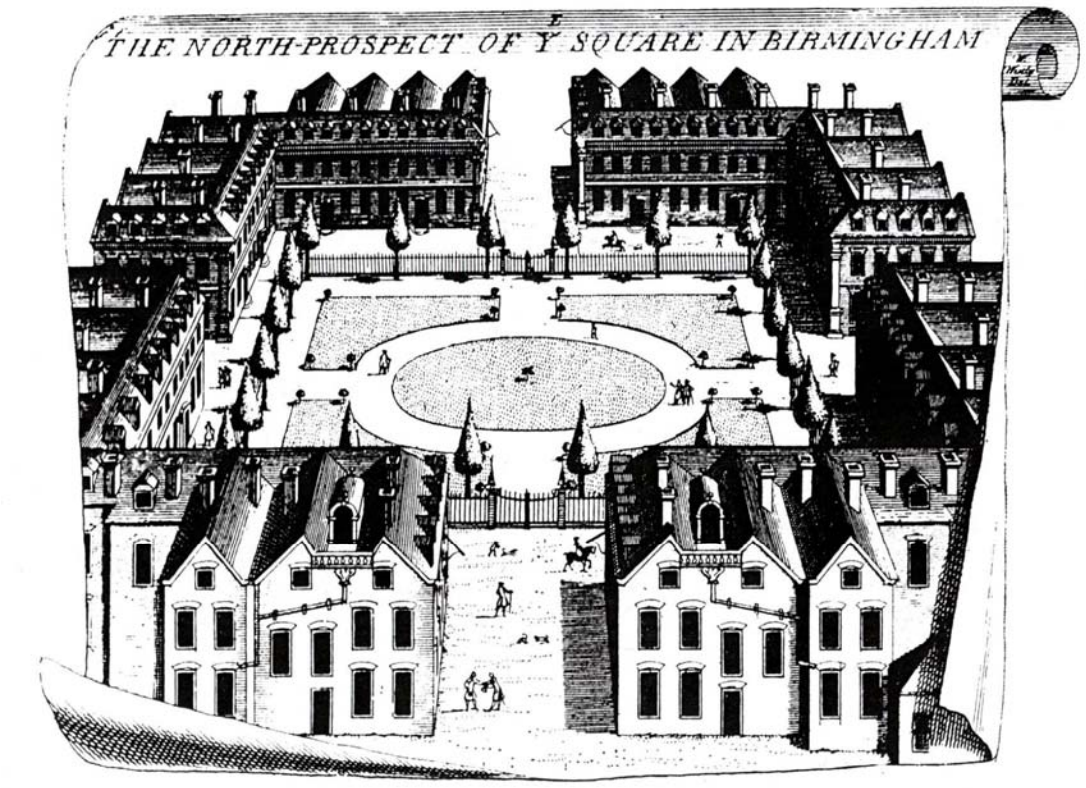
representative of commercial mints generally. It has come to overshadow the rest not because its commercial coins were distinctly superior, or because there were more of them, but because of its association with Great Britain's most famous steam engine manufactory, its participation in regal coinage, and its role as the prototype for the Tower Hill Mint. The Birmingham Reference Library's huge stash of archival materials from Soho has also allowed scholars to document Soho's undertakings, including its coining activities, in what is often extraordinary detail.

In devoting so much attention to Boulton's mint, with its peculiar organization, undertakings, and equipment, previous writers have unwittingly created a false general impression of what most commercial mints were like, how they fit into their general economic surroundings, and how they met the challenge of coining "good money." This false impression has, in turn, led to a rather serious misunderstanding of the fundamental causes of, and fundamental solutions to, Great Britain's small-change problem.

Although not much is known concerning any one of the Soho mint's rivals, one can at least try to form as accurate a picture as is possible of the commercial coinage industry by placing it in its proper context as part of Birmingham's metal button and "toy" trades. Such a picture might in turn suggest ways in which the Soho mint represented private mints generally, and ways in which it didn't.

One way of piecing such a picture together is by taking a tour of Europe's biggest toyshop. Touring Birmingham today won't do us much good, though: plain-old progress, German bombs, and (mostly misguided) city planning projects have altered the appearance of the place beyond recognition since the 1790s; and changes to Birmingham's industrial base, though less immediately visible, have been still more pronounced. So a little time-travel is called for. Alas, going back as far as the heyday of commercial coinage would

mean walking through some awfully dense fog. So I propose a compromise: a tour of Birmingham's toy-making district as it was on a mid-October Friday in 1829.



The Old Square, ca. 1790

From the Old Square

We begin at the Square, or at what the locals are already starting to call the "Old" Square. In the 1790s this was one of Birmingham's a prime residential addresses, its fine Georgian brick houses having been especially favored by Quakers. Since then it has gone commercial, as you can tell from all the sign-boards, including the one for recently-opened

the Birmingham and Staffordshire Gas Company.[2] The Square's better-heeled residents fled to "villas" in the suburbs to escape the fumes and noise from encroaching workshops, only to have the workshops catch up to them once more:

I remember one John Growse,
A buckle-maker in Brummagem:
He built himself a country house,
To be out of the smoke of Brummagem:
But though John's country house stands still,
The town itself has walked up hill,
Now he lives beside a smoky mill,
In the middle of the streets of Brummagem.[3]

But there are still plenty of reminders of the old days, including the Square's circular central garden with its iron railing and (now shabby) shrubbery, and the venerable Stork Hotel and Tavern, on the southwest corner, with its large courtyard and stables.[4] Admittedly even the Stork isn't what it used to be: besides having been disfigured with stone facing some years back, it has lost its portable amphitheatre. Now, instead of being treated to lectures on such scintillating topics as "Electricity, Galvanism, and Pneumatic Chemistry," the guests have to settle for billiards.

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[2] Gas lighting was introduced to Birmingham in 1819, seventeen years after having been installed and publicly demonstrated, to tremendous acclaim, at the Soho Foundry, and 27 years after Soho mechanic William Murdock first employed it at his own home.
[3] From "I Can't Find Brummagem," sung by James Dobbs at Bitmingham's Theatre Royal on November 24, 1828.
[4] The garden's days are numbered: in 1835 it will be paved over; and in another forty years all save a rump of the Square will disappear beneath the "Rue Chamberlain"—that is, Radical Joe Chamberlain's Corporation Street scheme.

Were we to wander a couple blocks east, along Litchfield street, we'd find ourselves next to Birmingham's massive brick workhouse, which was the most important 19th-century token issuer of all, and which is *still* using some of those old tokens. Because economic conditions have improved since the 'teens, the Overseers now have "only" 460 inmates, and another 250 or so out-poor, to look after (Yates 1830, p.).

As interesting as a visit to the workhouse might be, we're going to skip it because most of our business is in the other direction. The Square itself, though, has some (admittedly slim) connections to commercial coinage, or to Matthew Boulton at any rate, we'll linger here a bit.

The first connection has to do with Samuel Lloyd III, the son of one of the founders of Birmingham's first bank, who lived at No. 13, on the north side, before he joined the general flight to the suburbs. It was during a visit to Lloyd here in '76 that Samuel Johnson threw a fit while Boswell read him a passage from Barclay's *Apology*: ol' Dictionary got so riled that he grabbed the book, flung it to the ground, and stomped on it. The next morning Johnson was still fuming, so Boswell decided to get clear of him by visiting Soho. During his tour Matthew Boulton said to him, "I sell here, sir, what all the world desires to have—*power*." This was of course well before Boulton turned mint master—an occupation that would obsess him even more than making steam engines did.

Just up the street from Lloyd's old address, at 20 Upper Priory, lived and worked another person with a connection—this time a substantial one—to token coinage. Benjamin Patrick sank dies for several commercial tokens in the '90s, having taken over his father's toy business several years before. In 1811, when he'd relocated north of here to Bath Street, Patrick sank some dies for Thomas Halliday. He also engraved a private penny token for one William Booth of Perry Barr, which was part of Handsworth parish.

Although Patrick may not have noticed it at the time, Booth's pennies were exactly the same size as three shilling Bank of England tokens, and for good reason: Booth made them to cover his primary coining activity, which was counterfeiting.

Booth's Penny Token

Not being content to fake the small stuff, Booth also took to forging banknotes, including Bank of England notes, on a large scale. That proved his undoing, for when a some constables, responding to a tip, smashed through the roof of his specially-modified farmhouse, they caught him in the act of burning a stack of phony fivers. The survival of a bunch of half-charred Anthony Newlands[5] was all it took to convict Booth at Stafford Assize and to get him stretched there on August 15th, 1812.

As Paul and Bente Withers observe (1999, p. 139), "Things happened to Booth in twos." Having been twice tried for his life (the first time having been for the 1808 murder of his brother), he was also to be twice hanged and twice buried. According to the London *Star* for August 20th, 1812, the first attempt to hang Booth earlier that week failed when the rope slipped. Booth, finding himself on the ground yet very much alive, fell to his knees

[5] The counterfeiters' cant refers to the Bank of England's treasurer, whose signature appeared on its notes.

and begged for mercy, only to be returned to the scaffold. On the second try the drop refused to budge when poor Booth gave the signal for it to be let loose, and it took two strong men several minutes of hard tugging to finally deliver the felon to his maker.

At West Brom's Hare & Hounds they say,
William Booth his men did meet,
In counterfeit and forgery pay,
To the Walsall bank's defeat, me lads,
To the Walsall bank's defeat.

Twice tried, twice hung, twice buried,
Was Booth of Perry Barr...

At Stafford court he was arraigned
And there condemned on high,
The noose around his neck was ranged,
But Booth refused to die, me lads,
But Booth refused to die.[6]

Some years after Booth's original burial the Staffordshire-Warwickshire county line was shifted north. That put the felon's grave in the wrong county, so his remains were removed to the graveyard of Handsworth's St. Mary's Church. Thus did Great Britain's

[6] "Twice Hung, Twice Tried, Twice Buried" is an old Black Country Song. The verses are sung to the tune of The Greenland Whale Fishery; the chorus to that of MacPherson's lament.

most notorious counterfeiter end up resting in peace just yards from that great anti-counterfeiting crusader, Matthew Boulton. Such is the effrontery of which the Great Leveler is capable.

The last coinage connection also has to do with Upper Priory, and with Matthew Boulton, for it was here, in a large warehouse close to the Square, that John Wyatt—Birmingham's greatest inventor next to James Watt—succeeded in spinning yarn by mechanical means for the very first time ever, using a machine hooked up to a donkey-driven gin. That was in 1741. Eventually Arkwright and others got rich by means of similar inventions. But Wyatt paid a high price for being ahead of his time, ending up with nothing to show for his effort save a great deal of debt, which was to land him in Fleet Street prison on three separate occasions. Early in February, 1760, Wyatt-- fearing he was about to land in jail again, perhaps for good (he was then sixty year old)—penned a desperate plea for help to Boulton, who was his Snow Hill neighbor and friend:

> I am upon the Brink of Ruin, even this Day may compleat the Business excep [sic] I can be assisted by my friends with about 20£ to buy Iron, pay men Suport Credit etc. etc....
>
> I am Sorry to give you this trouble but if I attempt to Speak to this purpose the Subject choake one.
>
> I am father of a young family in an age too old for general approbation yet would I fail leave them out of the power of ill will to reproach them with the father was a poor whimsical old fool etc. etc. or the Widow deserves no better for yoking with such a Skatterbrain old enough for her father.

...I am assessing the general state of affairs and if annihilation must be, am afraid shall prove insolvent.[7]

Boulton came through, not just by handing Wyatt twenty quid, but by making the aging inventor his foreman, while taking on his two sons, Charles and John Jr., as apprentices. When the senior Wyatt died six years later Boulton, who attended his burial service at St. Philip's churchyard, became the boys' surrogate father. Although John Jr. proved a model employee, Charles was anything but: while Boulton treated him with extraordinary indulgence and generosity, forgiving one act of disloyalty after another, Charles responded each time with some new offence. In particular, Charles tried *twice* to scuttle Boulton's fondest hope—that of coining for the British government. He did so first by agreeing, in 1787, to manage Thomas Williams's Birmingham mint (and doing a damn good job of it, which was more than he ever did for Boulton), and then, a decade later, by having the sauce to bid against his old master and benefactor for the regal coinage contract that was at hand at long last.[8]

So much for the Old Square. Let's now make our way towards the heart of Birmingham's toy-making district, where most of Boulton's rivals set up shop. But first, a warning: Birmingham is no sightseer's paradise. It has never been a center of power of any kind—aristocratic, religious, financial, or political—so it lacks the grand buildings that symbolize such power. Some parts of town are exceedingly crowded, with carts full of raw materials and finished and semi-finished goods clogging the streets on their way to and from the canal wharves, or from one workshop to another. The place is also very noisy.

[7] MBP 375/214, Wyatt to Boulton February 9.
[8] For the whole story see my article, "Charles Wyatt, Manager of the Parys Mine Co. Mint: A Study in Ingratitude," *British Numismatic Review* (forthcoming 2006).

Young Thomas Carlyle, writing from here to his brother Alexander a few years back, reported

> the clank of innumerable steam engines, the rumbling of cars and vans, and the hum of men interrupted by the sharper rattle of some canal boat loading or disloading, or, perhaps, some fierce explosion when the cannon founders are proving their new-made ware (Zuckerman and Eley 1979, pp. 114-15).

As if all the noise and grime weren't bad enough the walking itself will be rough going: those egg-shaped cobblestones under our feet are known to locals as "petrified kidneys," and although the name is supposed to refer to their shape, the juxtaposition of "kidney" with "stone" also serves as an apt indicator of how unpleasant walking on them can be. Carlyle described doing so as "something like a penance":

> The Streets are pav'd, 'tis true, but all the stones
> Are set the wrong way up, in shape of cones,
> And *Strangers* Limp along the best pav'd street,
> As if parch'd peas were strewed beneath their feet,
> Whilst custom makes the *Natives* scarcely feel
> Sharp-pointed pebbles press the toe or heel.[9]

[9] From James Bisset's "Ramble of the Gods through Birmingham," in his *Magnificent Directory* (1808).

On the whole, then, Birmingham isn't a charming place, unless one happens to be charmed by lots of bustle and vivacity, which is what really sets it apart from other towns. Nor, according to Robert Southey, was it any better several decades ago:

> I am still giddy, dizzied with the hammering of presses, the clatter of engines, and the whirling of wheels; my head aches with the multitude of infernal noises, and my eyes with the light of infernal fires,-- I may add, my heart also, at the sight of so many human beings employed in infernal occupations... . Watch chains, necklaces, and bracelets, buttons, buckles, and snuff-boxes, are dearly purchased at the expense of health and morality. [I]t must be confessed that human reason has more cause at present for humiliation than for triumph at Birmingham (Skipp 1997, p. 72).

Mind you, Southey thought that industry generally made people worse off.[10] He also overlooked the fact that Birmingham was actually a relatively healthy place, with a mortality rate almost as low as that of the ancient spa-town of Bath, relatively decent housing, good drainage, covered sewers, plenty of clean water, and, despite all the steam engines, what was widely considered some of the best air around. Still, Birmingham's greatest virtues were and remain ones chiefly to be discovered *inside* rather than outside of its workshops.

But before you conclude that Birmingham is nothing but loud noises, coal dust, and brass shavings, let's head west along Upper Minories, to Bull Street, to glimpse one of

[10] Macaulay sets Southey straight in "Southey's Colloquies" (1830). The formidable historian observes, among other things, that "Mr. Southey has found a way...in which the effects of manufacturers and agriculture may be compared. And what is this way? To stand on a hill, to look at a factory, and to see which is prettier." In fact, he notes, "the poor-rate is very decidedly lower in the manufacturing than in the agricultural districts." For a modern refutation of Southey, which refers specifically to conditions in Birmingham, see Hopkins (1982).

the town's nicer parts. Bull Street is Birmingham's original retail venue, as is evident from the shops lining it on both sides (the display windows of which match some of London's swankest), and from its attractive mix of older vernacular-style buildings with well-proportioned Georgian ones. To encourage shoppers the town has installed free-standing cast-iron gas lamps and comfy flagstone causeways. There's even talk of repaving the street using Macadam's new process.[11]

Just across Bull Street, at the right-hand corner of Temple Row, is Pickard's ironmongery warehouse. Its owner, Thomas Pickard, is the son of James Pickard, one of the men responsible for erecting the world's first rotary-motion steam engine. The engine is still there, at the bottom of Snow Hill, where we'll see it later. A few doors to the right of Pickard's warehouse is the Lamp Tavern and, a bit beyond it, at No. 93, Cadbury's Tea, Coffee, and Cocoa shop where, if you're feeling generous, you can make a donation to the Society for Clothing Destitute Women and Children—one of Birmingham's many charitable organizations, which have been especially active since the Panic of '25. Across from Cadbury's stands the Quaker Meeting House, which isn't much to look at since the broad-brims bricked over most of the street-side windows some years back to keep out traffic noise. It was here that the Friends disowned gun maker and Lunar Society member Samuel Galton in 1796 for "fabricating instruments for the destruction of mankind" (Lloyd 1908, p. 126).

Crossing Bull Street, we make our way uphill along Temple Row, toward St. Philip's church. The newer, stone-faced buildings that distinguish the first part of Temple Row include the handsome structure erected just last year to house the Birmingham

[11] The macadamizing will be undertaken here and on several other streets in 1830. Birmingham will get its first potholes shortly afterwards.

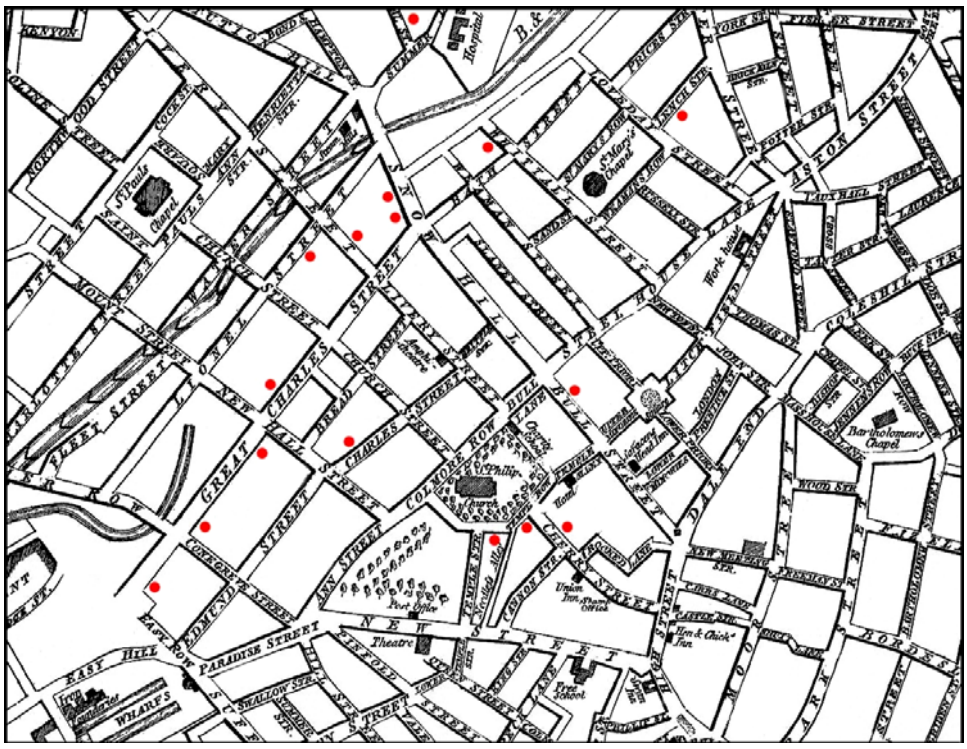
Institution for Promoting the Fine Arts. The Institution is presently hosting its second annual modern art exhibit, which I'm afraid isn't on our itinerary. Nor is the Royal Hotel just beyond, which has played host to both the hero of Trafalgar and Louis XVIII, as well as several members of the Royal family. It is a favored address of visiting businessmen, who enjoy making deals in its splendid but pricey saloon; it is also the place where, on July 14th, 1791, a dinner was held to celebrate Bastille Day, sparking the horrible Priestley riots. Finally it is where, following the suspension of Bank payments in March 1797, a group of Birmingham's own businessmen resolved to go on receiving its notes, as well as those of local banks.[12]

Resisting the temptation to refresh ourselves, we will continue a few yards further along Temple Row to Cherry Street, just opposite St. Philip's churchyard, named after the cherry orchard to which it led years ago, when it was a mere footpath.

Down Cherry Street

Cherry Street leads to several of Birmingham's note issuing banks, starting with the second oldest—originally Coales, Woolley and Gordon but now Molliet, Smith and Pearson—which is right before us. Before 1765, Birmingham had no banks in the strict sense of the term; instead, according to James Dent (1973??, p. 337), "every tenth trader was a banker or retailer of cash," which helps us to understand how so many were able to issue their own tokens. Birmingham's oldest bank, Taylors & Lloyds, was founded by the second Sampson Lloyd and by John Taylor (concerning whom more anon) on Dale End in 1765. After that, new banks starting appearing every few years. By the end of the

[12] Two months from the time of our tour, on December 14th, 1829, the Royal Hotel will also be the site of the founding of Birmingham's Political Union for the Protection of Public Rights, whose leader was Thomas Attwood. On May 7th, 1832, Attwood will address a crowd of 300,000 assembled at Newhall Hill, calling for the passage of the Reform Bill that will enfranchise Birmingham, giving it two MPs, one of whom will be Attwood himself.



The Birmingham toy district as it was during the 18th-century token episode. The red dots show approximate mint locations. Pickard's (later Parker's) Corn Mill and the Twigg & Co. (later Muntz's) Rolling Mill appear as two small quadrangles towards the upper left of the map, just above the Birmingham and Fazeley Canal at the bottom of Snow Hill. Map source: Birmingham Reference Library.

century the West Midlands as a whole had more bank offices per capita than any other part of England, London included (Duggan 1985, p. 48). Birmingham alone had half a dozen banks.

As we continue along Cherry Street it turns into Union Street, which opened in 1790 and is named, believe it or not, after the Union Inn located a few doors down to the right. Stepping just beyond the inn, we find ourselves before the local branch of the Bank of England, which opened on New Year's Day, 1827. The site had been that of another Birmingham bank, Gibbons, Smith & Goode, which went belly-up during the crisis of December 1825. The town's other banks weathered the crisis only to be battered in turn by two new pieces of legislation it triggered in London. The first, which took effect only

this April, required them to withdraw all their notes of less than £5, depriving them of what had been an important source of funds. The second, which provided for the establishment of Bank of England branches here and elsewhere in the provinces, dealt them an even harsher blow: the Branch Bank of England immediately took over responsibility for collecting local of taxes, while requiring local banks to keep substantial sums with it as a condition for receiving their notes. Thanks to these measures it quickly gained the upper hand over its local rivals, causing their circulation to shrink even more, and depriving Birmingham of so much badly-needed credit (Moss 1981).

There's something worth seeing on the other side of the street, but let's come back to it later, returning for now to the end of Cherry Street, where Cannon Street joins it from the east. Besides being home to several banks, this area also played its part in Birmingham's commercial coinage episodes. Joseph Merry, who ran one of the smaller 18th-century mints, lived and worked on Cherry Street. Like most 18th-century token makers he appears to have stopped making tokens following the appearance of Boulton's cartwheels, applying himself instead, according to Chapman's 1801 Directory, to the making of "pocketbook locks." He was, nonetheless, among those approached by Birmingham's Overseers in 1812 when they were looking to have their own pennies struck. By the end of the second token episode, in 1818, Merry had added the making of picture frames and military ornaments to his other undertakings. Nothing unusual about that: one of the chief characteristics of Birmingham's manufacturers was their ability to jump from trade to trade, or to pursue several trades at once, according to the market's dictates (Everseley 1964, p. 89); it was, after all, this very ability that allowed so many button makers to take up coining, and to do it in a flash:

I'm a roving Jack of all trades,

Of every trade and all trades,

And if you want to know my name,

They call me Jack of all trades...

In Swallow Street made bellows-pipes,

In Wharf Street was a blacksmith;

In beak Street there I did sell tripe,

In Freeman Street a locksmith.

In Cherry Street I was a quack,

In Summer Lane sold pancakes;

On then at last I got a knack

To manufacture worm cakes.[13]

Cherry Street is also the location of the warehouse and headquarters of one of the principal 19th-century token issuers: the Rose Copper Company, which was formed in 1793 by a group of local manufacturers, including Matthew Boulton, and which supplied much of the metal used for the Boulton copper (Withers 1999, p. 63). Turning left down Cannon Street, we come across the office of the Crown Copper Company, which was founded a decade after the Rose, and which also issued large numbers of tokens, here and at its smelting works in Neath, in 1811 and 1812.

Just beyond the Crown Copper Company, at No. 6, is Birmingham's Bank of Savings, founded just two years ago and already boasting more than 2000 accounts worth

[13] "Birmingham Jack of all Trades." In John Raven, *The Urban & Industrial Songs of the Black Country and Birmingham* (1977, pp. 178-80).

over £38,000. It is only open on Mondays and Thursdays, and then only from noon to two o'clock. (Talk about bankers' hours!) Across from it sits the Old (Calvinist) Meeting House, founded in 1738, badly damaged during the Priestley Riots of 1791, and rebuilt in 1806. But the attractions that most interest us are all at the end of Little Cannon Street, which branches off Cannon to the left just before the Meeting House. The first of these is the Assay Office, originally established, thanks to Matthew Boulton's successful lobbying of Parliament, in 1773 and relocated here in 1815.[14] The other is Phipson's Pin Manufactory, which inspired Adam Smith's famous account of the division of labor, and which is still turning out about 10 million pins a year. It's a shame that strangers are no longer admitted to the works as they were in Smith's day, when Birmingham's businessmen were keener on showing off their latest whim-whams than on protecting themselves from snooping rivals.

Returning to Union Street, and proceeding along its far side, we pass the Wesleyan Church—a fairly recent structure that replaced one consecrated by Wesley himself—and turn left onto Crooked Lane. It was at the lower end of this narrow alley that John Taylor, the other co-founder of Taylors & Lloyds Bank and Birmingham's most famous button maker, got his start gilding metal buttons. Eventually Taylor, who "appeared to possess an exhaustless invention" (Drake 1825, p. 13) as well as an incredible knack for discerning the public's likes and dislikes, relocated to Union Street, where his factory produced about £800 worth of buttons every *week*, and where the metal sweepings alone are said to have been worth £1000 per year.

[14] The explanation for landlocked Birmingham's otherwise puzzling anchor hallmark is that Boulton and other delegates from the towns of Birmingham and Sheffield were staying at London's Crown and Anchor Hotel while trying to convince Parliament to establish assay offices in their towns. There they decided to base their towns' assay marks on the hotel's name, with a coin toss to determine which mark went to which town.

When Taylor passed away in 1775, he was worth £200,000. Needless to say, his example inspired many others, including Boulton (who referred to him, reverently, as "the Squire"), giving a big boost to the button industry, which grew rapidly in the course of the next two decades. Of course, very few approached Taylor's degree of success, while many failed altogether: "Trade, like a restive horse, can rarely be managed; for, where one is carried to the end of a successful journey, many are thrown off by the way" (Hutton 1795, pp. 105-6).

Among the secrets behind Taylor's great success was his determination to lower costs by taking full advantage of the division of labor. Although Adam Smith drew on Phipson's pin works to illustrate his theory, he might have made his point still more strongly by looking further down the street: while pin-making at Phipson's required fourteen different steps, that was nothing compared to what went into making a single button at Taylor's factory. "[Y]ou will perhaps think it incredible," a 1755 visitor wrote a friend in London, "when I tell you [the buttons] go thro' 70 different Operations of 70 different Work-Folk" (Hopkins 1989, pp. 6-7).[15] Such extreme division of labor, in button making as well as in other branches of Birmingham manufacturing, was perhaps the most important technical innovation of the last half of the 18th century, albeit one that has, despite Adam Smith's efforts, been overshadowed by various nifty but arguably less important mechanical inventions (ibid., 1989, p. 39).

[15] Lord Shelburne, who visited Taylor's in 1766, was likewise impressed by its reliance upon division of labor, which he described as involving only fifty steps (perhaps less-fancy coins were involved) and which, he said, made producing buttons "so simple that, five times in six, children of six or eight years old do it as well as men, and earn from ten pence to eight shillings a week" (Court 1938, 2p. 40). Members of the 1833 Factory Inquiry Commission were considerably less thrilled about Phipson's methods, citing it alone among all the Birmingham factories they investigated for the ill-treatment of children (Hopkins 1982, p. 54).

Around St. Philip's

After Taylor set up shop back in 1765 the center of Birmingham's button making activity shifted northwards, and that's where the vast majority of the town's coin makers were located. So let's return by way of Cherry Street to Temple Row, crossing it in order to pause for a moment at the iron palisades that surround St. Philip's churchyard, with the Rectory just to our left. Look down and you'll notice that we're standing on *cement* flags—a small experimental patch only, to be sure, but one that bodes well for the eventual wholesale disappearance of those lousy petrified kidneys.

Although it will one day be Birmingham's cathedral, St. Philip's is only a church at present. This Baroque structure, designed by Thomas Archer, was begun in 1709 (using flaky stone that's already deteriorating), consecrated 1715, and finished in 1719 when the area on the far side of the yard was still open country. The dome is often said to be a copy

St. Philip's Church, from Colmore Row

of the one on St. Paul's in London, which it obviously isn't; it is in fact superior in at least one respect, in that the cross on St. Paul's dome stands at the same distance from sea level

as St. Philip's transom. The church is presently hosting, for the last time, Birmingham's triennial music festival, the proceeds of which go to the Hospital on Summer Lane. This year's festival will rake in almost £10,000, notwithstanding a boycott organized by a group claiming that the whole idea somehow violates the spirit of Christianity.[16]

Beyond the churchyard's iron gates are gravel paths lined by double-rows of somewhat stunted looking lime trees. Normally the churchyard would be full of children playing knack-and-spam or birds-in-the-bush or some other game involving marbles, or hide-and-seek among the graveyard markers (one of which belongs to poor John Wyatt), while their mothers toil away in nearby workshops. But today the yard is closed to all save festival ticket holders, which leaves us out. Also shut out is an odd fellow sporting a long black beard and a red soldier's outfit, who approaches us along the pavement brandishing a fist-full of rock candy in one hand and a black canister in the other and blaring, "Composition! For colds and coughs. Composition...." Feeling perfectly healthy, we veer a tad to the right.[17]

Jemmy the Rockman

All of a sudden St. Philip's ten bells start tanging—one o'clock already—and at once the workshops and factories around the yard begin disgorging throngs of workers on their way to lunch. Joining them are students—mostly boys but a few girls as well—from the Blue Coat Charity School, run by the Church of England, which stands on the northeastern side

[16] The festival venue will change to the new Town Hall after its completion in 1830.
[17] Turns out he's James Guidney, a.k.a. "Jemmy the Rockman." Demobbed after the French wars, he came to Birmingham in 1825 and was a churchyard fixture until his death in 1866.

of the yard, beyond the Rectory. A few are, oddly enough, wearing *green* coats. They are supported by a special bequest left by a Birmingham mercer who died more than a century ago.

Until 1800 "St. Philip's Churchyard" was the nominal address of three persons involved in commercial coin making, the first a major manufacturer, the others small-scale die makers. William Lutwyche relocated to the churchyard—or rather to one of the narrow, three-storied brick buildings just across from the church at the top of Temple Row—in 1796, having started making tokens six years before. Back in the '60s that terrace of buildings, with its stone doorways, window-heads and balustrades, was not only the highest but also the most posh bit of real estate in town. The place started to go commercial, with workshops popping up behind the residences, a decade or so later.

You may recall that Lutwyche, besides being a major supplier of genuine tokens, also made large amounts of spurious coin. Lutwyche's higher-end products included his own private farthings, which are of special interest because they illustrate some 18th-century coinage equipment. One series shows an old-fashioned weighted rod coining press on its reverse, with the Goddess Moneta on its obverse; the other shows a screw press with a circular wheel or "fly" on its reverse, with Justice seated, holding her balance and pouring coins out of a cornucopia on its obverse. It would perhaps be more accurate to say that the tokens are significant for what they *fail* to depict. But we'll come back to that later.

According to David Dykes (1999, p. 174n5) William Mainwaring, whom numismatists had formerly treated as an independent Temple Row token maker, actually worked for Lutwyche, engraving tokens for him until his death in 1794. Lutwyche purchased Mainwaring's die-making equipment upon the latter's death, and it appears that he eventually took over his residence and workshop as well. Like most of the 18th century

token makers Lutwyche gave up the trade at the end of the century. One numismatist (Mitchiner 1998, pp. 2068) speculates that he then sold *his* equipment to Thomas Halliday just before Halliday left Soho to set up his own shop.

The second die maker with a "St. Philip's Churchyard" address was Roger Dixon, who engraved token dies for Lutwyche in the 1790s and for Halliday two decades later.

Continuing along Temple Row as it forms a semicircle around St. Philip's, we cross Temple Street, down which we spy the round roof of the Theatre Royal, whose striking classical façade, on New Street, was designed (thanks to Boulton's urging) by Samuel Wyatt in 1777: the façade is all that remains of the original theatre, the rest of which burned and was rebuilt twice, in 1792 and again in 1820. We haven't time enough for a look. But we will allow ourselves to step as far as No. 2 Temple Street, for that was the home of George Wyon III, scion of the extraordinary Wyon clan of coin die engravers, whose members played leading parts both in the commercial coinage episodes and in the reform of the Royal Mint.

George Wyon III worked at Soho's Silver, Plated, and Ormulu department from 1775 to 1783 or 4, when he set up his own die-engraving business at this address, where it remained until Wyon shifted to Lionel Street in 1789 (Quickenden 1995, p. 356). During the '90s Wyon's two older sons, Peter and Thomas, sank dies for many copper tokens and medals, with Peter specializing in the former and Thomas in the latter. After their father death in 1797 they carried on the family business for a while, but then decided to go their separate ways, leaving it to their younger brother, George Wyon IV, who runs it still with *his* son, William Henry. Peter, meanwhile, remained in Birmingham, eventually going to work for Thomas Halliday at Newhall Street, where he and his son William (whom he apprenticed in 1810) engraved dies for many 19th-century tokens. Peter also ran his own

private business at his home on Cock Street, behind St. Paul's chapel, until his death seven years ago.

As for Thomas, he and his family moved to London, where Thomas Sr. managed, thanks to the recommendation of the Coin Committee, to land the post of Chief Engraver of Seals at the refurbished Mint on Little Tower Hill. His son and apprentice, Thomas Jr., followed him there in 1811 when, at 19 years of age, he became the Mint's youngest (probationary) engraver. Four years later Sir Wellesley Pole made Thomas Jr. the Mint's *Chief* Engraver; and a year after that, he assigned the second engraver's post to Thomas's still younger cousin, Peter Wyon's son William, who had recently completed his apprenticeship. Tragically, Thomas Jr. died in September 1817, at age 25, having held the post of Chief Engraver for less than two years. The post was then left nominally vacant for several years, because the foreign birth of Benedetto Pistrucci, whom Pole favored, disqualified him for it. Eventually William Wyon filled the vacancy created by his cousin's early death. And so began the reign of the celebrated Wyon "dynasty" of die sinkers, which was to dominate British coin engraving for the rest of the century.[18]

William Wyon II

[18] Thomas Wyon Senior will himself pass away in London in1830.

Forrer's *Biographical Dictionary of Medallists* (1970, v. 6) devotes over 100 pages to members of this extraordinary family alone. Mitchiner (1998, pp. 1997-98) gives a fairly exhaustive account of Wyon family members but does not mention the Wyons living in Birmingham in 1829. For further details see Carlisle (1837) and Sainthill (1844 and 1853).

Returning to Temple Row West, we test our self-discipline again by walking straight past the Globe Tavern, and (with less effort) the New Library,[19] pausing just beyond the last to glance down the length of Waterloo Street—a brand-new cut leading straight to Christ's Church. This otherwise poorly situated church looks rather imposing from this angle, perched on its own masonry mesa, beneath which are vaulted catacombs. Although the fact is a well-kept secret, the remains in one of those vaults—No. 521, to be exact—belong to John Baskerville, the controversial printer and freethinker, whose body was quietly brought here after a canal wharf extension did away with his original burial site.[20]

On the last bit of Temple Row stands the Birmingham Mining & Copper Company, which was established by Birmingham manufacturers in 1790 to free the town from its dependence upon Thomas Williams, and which (like Birmingham's other copper companies) issued lots of copper tokens in 1811 and 1812. Beyond it is Colmore Row, which defines the northern boundary of St. Philip's churchyard to the east. Crossing over and proceeding west one block, we come to the busy end of Newhall Street, where boys hawk copies of Aris's *Gazette* and the recently founded *Birmingham Journal*, while passengers wait to board one of the popular new streetcars, which cost half as much as a hackney coach. Where we to continue one block further we'd come to Congreve Street, where the headquarters of still another copper company and 19th-century token source—the Union Copper Company—used to be. But that Johnny-come-lately copper company, finding that it had overstocked the market, sold out to the others and dissolved itself several years ago. So rather than walk on, let's pause here and take our bearings.

The Prospect at Newhall

[19] The Old Library was back on Union Street, just beyond the Branch Bank of England.
[20] For the full, bizarre story of the trials of John Baskerville's body see Uglow (2002, pp. 225-6)

The area to the north of Colmore Row, from Easy Row to our left (where Baskerville's estate once stood) to Snow Hill to our far right, and extending some blocks beyond St. Paul's church, is the Birmingham toy district. Excepting Colmore Row itself (which was then called "Newhall Walk"), all of it was open country before the middle of the last century—a large chunk of the vast Newhall Estate, which (despite the town's encroachment) couldn't be parceled for development without Parliament's permission. Once that was obtained, in 1750, the estate was gradually broken up into bits bearing 120-year leases, all of which were swooped up as soon as they became available.

As for Newhall manor itself, the large structure, which stood just beyond what is now the intersection of Newhall and Great Charles Streets, was auctioned off in 1787 on the understanding that it would be taken apart and carted off by its new owner. No sign of it remains, except for the odd flights of ten to fifteen steps leading to the entries of nearby tenements—reminders of the low hill on which the manor once stood. At one time the site faced a larger hill, on which a roller-coaster once stood; but that hill was gouged away long ago:

> But what's more melancholy still
> For poor old Brummagem,
> They've taken away all Newhall-hill
> Poor old Brummagem!
> At Easter time, girls fair and brown,
> Used to come rolly-polly down,
> And showed their legs to half the town;
> Oh! the good old sights in Brummagem.

Although sentimental types like James Dobbs, whose ditty was just quoted, might regret the loss of Newhall Hill, Birmingham's steel toy and button makers welcomed it, as they were more than pleased to abandon their crammed and foul-smelling quarters in Digbeth and other older parts of town for the modest but clean and comfortable structures erected on what were once Newhall's grounds. Most of them chose to reside and work in the same dwelling, with their living quarters at street level and their workrooms upstairs or in outbuildings to the rear. By 1780, or just a few years before the commercial coinage episode began, the present street pattern was more or less established, with Little Charles, Great Charles, and Lionel Streets running parallel to Colmore Row and Newhall, Church, and Livery Streets running perpendicularly from the same. Nowadays most of Birmingham's 30,000-odd toy- and button-trade workers spend their days among these same streets.

But what was it exactly that allowed Birmingham to become, in Edmund Burke's oft-repeated phrase, "the great toyshop of Europe"? Although the origins of metal working in Birmingham remain obscure, it certainly goes back beyond the 15th century, when the small village of Birmingham (or whatever the spelling was then) was already a source of cutting tools, nails, and swords. Until the end of the 17th century very little growth took place, but during the 18th Birmingham acted like a magnet, attracting all kinds of skilled artisans from every manner of trade, and experts in the metal trades especially. But why Birmingham rather than Sheffield, which was surrounded by coalfields and good sources of waterpower, or Bristol, which was more accessible? The best explanation anyone has come up with is the one found in Drake's guidebook, which I've naturally taken along for our tour. It was, in a word, *freedom*. Birmingham, Drake (1825, p. 12) observes, enjoys

> perfect freedom...from all corporate and chartered dignities, honours, immunities, privileges, and annoyances. No absurd forms of wearisome servitude are necessary to give the active tradesman a right to practice his art here. ... The atmosphere of this place is free to anyone, and the consequence has been, that it has reaped the benefit of active talent and industry, flowing in from all quarters.

Because of its status as an unincorporated town, Birmingham (unlike Bristol) became a haven for nonconformists after the 1661 Corporation Act excluded Dissenters from membership in town corporations. The Five Mile Act of 1665 enhanced its relative attractiveness by driving non-conforming ministers out of incorporated towns and cities and their immediate environs. The Test Act of 1673, finally, did its part by excluding intelligent and ambitious Nonconformists from civic and municipal offices, thereby inadvertently encouraging them to try their luck in business.

Although the Five Mile Act was effectively repealed, while the Test Act was much weakened, by the Toleration Act of 1689, Birmingham's status as a haven for Nonconformists was by then firmly established. So also was its status as the center of the buckle trade, which religious persecution drove here from its former headquarters in nearby Walsall (Court 1953, pp. 53-60). Touring the city 130 years later—a year after the Test and Corporation Acts were finally repealed—we find that, although buckles have long since given way to buttons, in other respects little has changed: Birmingham is still the world's chief source of metal fasteners and toys, and Dissenters continue to infuse the place with entrepreneurial energy (Uglow 2002, p. 19).

But the contribution of Nonconformists to Birmingham's economy, great as it was, mustn't be exaggerated. After all, most of Birmingham's growth occurred well *after* 1689,

when Birmingham no longer offered dissenters all that many privileges they couldn't have elsewhere. Nonconformity was, furthermore, hardly a prerequisite for being a successful manufacturer. Of the 18th-century commercial coiners, the third or fourth largest, Peter Kempson, was, according to fellow button maker Julius Hardy (1973, p. 61) (himself a methodist), "a very rigid Establishment man," while Matthew Boulton, though he consorted with mavericks (including the controversial Joseph Priestly), and inclined towards deism, regularly attended services at St. Paul's Chapel before being entombed beneath Handsworth's thoroughly Anglican St. Mary's Church.

Moreover, if religious freedom were all that mattered Boulton and his fellow coiners might have fared just as well in Sheffield, which was Birmingham's nearest rival in the button trade and which was also unincorporated. But Sheffield was held back, first by the authority of the Cutlers' Company and then (after 1750 especially) by the general spread of craft unionism, with its attendant strikes and "rattenings."[21] Despite efforts, starting in 1800, to outlaw them, craft unions would eventually transform Sheffield into "the world's biggest closed shop" (Tweedale 1993, p. 32).

And so it happened that Birmingham became "emphatically the town of 'free trade'," where practically no restrictions, commercial or municipal, were known" (Timmins 1866, p. ??), and where the notion of free trade was even to be extended, however briefly, to the nation's coinage.

[21] Rattening was the practice of confiscating and hiding artisans' tools and wheel bands as punishment for their failure to pay union dues or to abide by union rules.

To Snow Hill

Let us then enter the toy district proper, proceeding down Newhall Street one block, and turning left on to Little Charles Street. This was Kempson's principal business address (the other having been on Great Charles Street) from 1791 to 1823, when he retired from button and medal making, leaving his business to his son, who had been his partner for more than a decade.

Besides having been one of the larger token producers both in the '90s and in 1811-12, Kempson was perhaps the best. For his dies he turned frequently to John Gregory Hancock, Sr., who designed tokens for him between 1794 and 1801, and to both Peter and Thomas Wyon, who worked for from 1791 to 1799 and also (in Peter's case) in 1811 and 1812. Apart from making coins Kempson also made gilt and plated buttons, pocket calendars, medals and medalets. After Boulton's death he was second only to Thomason among Birmingham's medallists. The most prized of all his products today are the tokens or medallets he made, especially for collectors, depicting better-known buildings in London, Coventry, and (of course) Birmingham.

Little Charles Street comes to an end at Livery Street where, if we glance to our left, we can see all the way to Great Hampton Street, which turns into Hockley Road, which leads directly to Soho. Thomas Dobbs, the metal dealer and roller (his steam-powered rolling mill was located on the Rea, at King's Norton) whose daughter married John Southern, manufactured just over one ton of 18th-century tokens somewhere along this street—most likely a block or two to the north. Closer at hand there stands a lumbering pile of brickwork: the Union Meeting House. Until the Priestley Riots of 1791 this was Swann's Amphitheatre—a place for equestrian shows and bawdy circus acts:

E'en jugglers, big with expectations ran,
certain to get engagements with TOM SWANN.
How was the age of delicacy shock'd,
And feminine decorum grossly mock'd,
By seeing women dress'd in men's attire,
Vaulting on ropes, or dancing on the wire?[22]

But after the riots the building was appropriated to fill-in for the Old and New (Calvinist) Meeting Houses, which the rioters had pillaged. Apart from it Livery Street presents few points of interest—just a broad, long expanse lined with one tradesman's shop after another, many having large signboards stretched across their windows, painted black with gilt letters and finials and resting upon what appear to be gilded croquet balls: "Thos. Frost, Lapidary," "John Jones, Gun and Pistol Maker," and (naturally) "Parrock's Livery Stable." But as we have no need for gemstones, firearms, or a horse, we'll make our way across Livery Street to tiny Brittle Street, which takes us the rest of the way to Snow Hill.

Snow Hill is one of Birmingham's busiest thoroughfares, with something like 40 mail coaches and post chaises a day descending it on their way to Wolverhampton and points beyond. From our vantage point at the corner of Snow Hill and Brittle Street we have an excellent view of St. George's Church to the northwest. Consecrated seven years ago, it is in the Gothic style that is about to become the rage among progressive architects. On the corner itself the New Theatre for the School of Medicine and Surgery is set to open: a poster on its entrance announces an inaugural lecture by W. S. Cox, F.R.S., to be

[22] From George Davies, *Saint Monday* (1790), quoted in Money (1971, p. 22).

offered on Sunday evening. [23] Perhaps we'll return then to hear it, but for the moment the attractions that concern us are to be found elsewhere on Snow Hill. Turning left and heading down Snow Hill just a few yards, we find ourselves opposite No. 7, the site of the Boulton family toyshop, behind which stood the residence where, on September 3, 1728, Matthew Boulton was born. Young Boulton took over the shop after his father's death in 1758, by which time the business extended back all the way to Slaney Street and beyond. But that, of course, was still not space enough to accommodate Boulton's grand ambitions, which is why he began building the Soho works a few years later.

You might have expected the Birmingham authorities to make a museum out of the old Boulton place, or at least to mount a plaque there, given the paucity of antiquities and monuments in this town. But so far at least no one seems to have bothered. Perhaps they'll get around to it eventually.[24] On the other hand, they might just as well commemorate Boulton by sticking a plaque *anywhere* and inscribing it Christopher-Wren fashion: "If you seek his monument, look around you."

Continuing further down Snow Hill, we reach the intersection of Great Charles Street, a spacious and straight avenue that cuts the toy district into northern and southern halves. It was once lined with nothing but fine Georgian houses and gardens but is now dotted on both sides with warehouses, workshops, and factories—including more button-

[23] William Sands Cox (1802-1875) is in fact the founder of the School, which will become Queen's College in 1843.

[24] No, they won't: eighteen years from the date of our tour, in 1847, the entire area between Livery Street and Snow Hill from Colmore Row to Great Charles Street was razed to make way for Isambard Kingdom Brunel's red brick and bath-stone Great Western Railroad Station with its 500-foot-long curved glass roof. That station in turn gave way in 1906 to the bland stretch of concrete that still exists today, though parts of the old Snow Street station have been preserved and were incorporated into the receently renovated Moor Hill station.

makers than any other Birmingham Street. Even now, despite a decline in the industry since the introduction of covered "Florentine" buttons a decade ago, there are at least ten metal button makers here, which is about one-tenth of the city total. The largest of them, Ledsam & Sons (down at the western end of the street, at No. 10), employs about 300 workers. But Ledsam & Sons is quite exceptional: most button makers are mere "garret masters" having only a few employees—often just the owners' wife and children—and commanding only a few hundred pounds of capital (Hopkins 1989, p. 55).

Not surprisingly Great Charles Street has also been home to several commercial coin mints and engravers. But most of them, like Ledsam & Sons, were at the western end of the street, to which we'll come later. For the time being let's cross Snow Hill to Bath Street, which is the eastern continuation of Great Charles Street. Doing so brings us to an exceedingly busy part of town jam-packed with toy and jewelry shops as well as establishments involved in gun-making. As we pass the entrance to Shadwell Street to our left we can see the Roman Chapel just around the bend. Beyond and opposite the Chapel, at 48 Shadwell Street, stand the large brass works run by the four Heaton Bros.—John, William, George, and Reuben. But it is the fifth Heaton brother that interests us, and his shop is located just a bit further down Bath Street, at No. 71.

Ralph Heaton II has been at this address since 1817, having previously been employed by his father as a diesinker at the brass works on Shadwell Street. His shop is presently devoted to brass founding, stamping, and piercing, as well as to die sinking. But less than a quarter-century from now (if you will forgive my stepping a bit forward in time) Heaton will be minting copper coins here—500 tons of them, to be precise—for the British government. What's more, he'll be doing it using steam-powered coining and cutting-out presses salvaged from the Soho. How's that for history repeating itself?

Beyond Heaton's place Bath Street is crossed by Whittall Street. This was the address of Thomas Mynd, who was responsible for a half a dozen tokens nineteenth-century tokens. There's nothing particularly special about most of Mynd's tokens, which he made during the height of the token craze, between 1794 and 1797.[25] But Mynd was special in that he married Matthew Boulton's sister Catherine in 1762. Boulton then gave him a job at Soho, where he worked until 1769, when (to his father-in-law's considerable dismay) he left to start his own high-end buckle business (Quickenden 1995, p. 354).

Returning to Snow Hill, and making our way down it, we arrive at the public weighing machine, with its fancy cast-iron weight-house embellished with figures of Justice (holding the inevitable balance) on pillars. Before it a log jam of carts and wagons spills into the street, obstructing traffic and forcing us to ply our way carefully along the street between wagon-loads of merchandize and piles of horse-jank. Safely back on the causeway, we arrive at 107 Snow Hill. This was once the address of yet another button-maker turned token manufacturer named John Gimblett, Jr. Gimblett made tokens for the Birmingham Workhouse in 1788. He was also a major producer of regal evasions. A few doors down on the same side, at 100 Snow Hill,[26] resides the button-making firm of Hammond, Turner

[25] One of Mynd's tokens, however--the Basingstoke Canal shilling—was exceptional, first of all because it was a shilling, rather than a halfpenny or penny, and secondly because it was a *copper* shilling. The Basingstoke shilling is also dated 1789, which makes it one of the earliest 19th-century tokens, and the only one in which neither Westwood nor Boulton had a hand. At least one numismatist, however (Dykes 2000, p. 95) suspects that the date may be false, while also speculating that the canal tokens were mere presentation pieces (ibid., p. 94).

[26] Although British residences are usually numbered in standard European fashion, starting from one end of a road or street with even numbers on one side and odd ones on the other (and about one number for every 25 feet of frontage), some streets and roads have both odd and even numbers on both sides, with the numbers starting at the end of one side of the road or street, rising continuously to its end, and continuing to rise in the opposite direction along the other side. Thus the highest and lowest numbers of a road or street may both end up being at the same end, though on opposite sides. In Birmingham the presence of many rear or "court" addresses further complicates matters. So while I've tried my best to place old addresses in their proper place, doing

and Son which, with around 150 employees (not counting out-workers), is Birmingham's second largest. One of its founders, Bonham Hammond, has been credited with a single large 18th-century token commission only. The 1797 Leith Halfpennies, which showed a ship at sea on its obverse and Britannia seated on its reverse, may have been struck at this factory, which was then Hammond, Turner, & Dickenson; but they might also have been struck at another gilt- and plated-button factory Hammond owned further along the way, at 11 Great Hampton Street.

Leith Halfpenny Obverse

Hammond, Turner, & Dickenson were also major manufacturers of 19th century tokens. For that reason, it would be nice to have a look inside, if we could. Unfortunately, they don't admit tourists, not (as is usually the case) because they are jealous of their manufacturing secrets, but because they find that entertaining visitors slows things down (Osborne 1840, p. 228).

Near the Birmingham Canal

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so where streets have been greatly altered, or where (as in Snow Hill's case) they've largely disappeared, involves some guessing.

As we reach the very bottom of Snow Hill, we find ourselves standing over the Birmingham Canal. The canal descends through thirteen locks attended by lock-openers locally known, for some reason, as "rodneys." The locks, officially named the Farmer's Bridge Locks but known to locals as the Old Thirteen, start from the Crescent to our west and finish just before the Aston Road bridge 'ole (as the canal-men refer to it) to our east. Just beyond that the main line branches off to Fazeley, where it meets the Coventry Canal. The canal, which first opened for business in 1790, is now crowded with narrow (70' by 7') boats (not "barges"), each still drawn by what Hutton described back in '83 as "something like the skeleton of a horse, covered with skin," yet capable of conveying to Birmingham 50 tons or more of food or raw materials from London, finished goods from Hull, Manchester, and Liverpool, grain from Oxfordshire, or coal from the Black Country:

> Since the canal navigation,
> Of coals we've the best in the nation,
> Around the gay circle your bumpers then put
> For the cut of all cuts is the Birmingham cut![27]

Coal accounts for the concentration of steam engines along the canal, for it's very expensive to transport substantial amounts of it over even short distances by land. From our vantage point we can see the tops of quite a few tapering smokestacks—there are perhaps 100 in Birmingham all told—each emitting a column of thick black smoke.[28] The

[27] From "The Birmingham Lads," written by Birmingham's own Poet (John) Freeth, upon the opening of the main Birmingham Canal in 1769. On a *good* day the rodneys and their horses can maneuver a boat through the "Old Thirteen"—a mere half-mile stretch—in just over an hour.
[28] The smoke would be even thicker were it not for the Birmingham Street Act passed toward the end of the reign of George III (62 Geo. 3d. s. 42), which required that steam engines "consume

one to our left belongs to the Phoenix Iron Foundry at the corner of Snow Hill and Lionel Street. Opposite the canal from it is a stack belonging to a much older engine: the one at Samuel Parker's Corn Mill. Just beyond that there's a still older engine—the power source for Muntz's rolling mill and wire-drawing plant at 65 Water Street. Elsewhere, between the numerous warehouses, factories, and wharves lining the canal on both sides, at least a dozen more smokestacks are visible, including that of the Albion (corn) Mill, all the way down toward Summer Row.

We'll take a closer look at the Parker and Muntz engines in a moment. First, though, let's cross the canal. Doing so brings us to the old Salutation Inn, to our left. This was a favorite recreation spot back in the commercial coinage days, when it boasted a lovely garden and twin bowling-greens. In 1798 it was also the scene of Birmingham's last-known bull baiting—one that ended relatively happily for the bull, for a change: the bull managed to break tethers and escape, and was eventually rescued by a militia body known as the Birmingham Association. Birmingham authorities finally banned bull baiting in 1811, ahead (believe it or not) of the rest of Great Britain.

Just beyond the Salutation the road forks three ways, with Constitution Hill on the left, Summer Lane on the right, and Little Hampton Street in-between. A few yards down Summer Lane the road forks once again, with Hospital Street veering off to the left. If we kept going down Summer lane we'd soon arrive at the Hospital (or the "Orspickle," as the locals refer to it), to the support of which the triennial music festivals are devoted. But our

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their own smoke," with fines imposed on incompliant engine owners. Still this early instance of pollution control did not suffice to prevent Carlyle from describing to his brother Birmingham's "Torrents of thick smoke, with ever and anon a burst of dingy flame...issuing from a thousand funnels" (quoted in Zuckerman and Eley 1979, p. 114).

concern is with Hospital Street itself, which was the last address of the greatest of all the Birmingham token engravers, John Gregory Hancock, Sr.

THE GENERAL HOSPITAL: SHOWING THE TWO WINGS ADDED IN 1790.

Hancock, like so many other great Birmingham die-sinkers, apprenticed at Soho, his father having bound him to Boulton in 1763, when he was just thirteen (MBP 236/102). He undertook his first token commissions, including the original Parys Mine mint Druids, as John Westwood Sr.'s business partner and "front" man. After Westwood's death in 1792 his place in the partnership was taken by Westwood's brother and fellow button-maker Obadiah. Hancock went on making dies for Obadiah Westwood, including those for some American pattern cents, with help from his apprentice John Stubbs Jorden, until 1795. Then Jorden and Hancock each struck out on his own, with Jorden becoming a small-time independent token maker and Hancock becoming the town's most sought-after token engraver. Hancock's later clients included Thomas Dobbs, Matthew Boulton and Peter Kempson; and his work for the last—medals, mainly—made him especially famous. But his health was never robust, and he passed away at 55 on November 11, 1805. His

death was, according to Aris's *Gazette*, (*BG* November 21, 1805) "sincerely lamented by all the friends and patrons of genius."

Although Hancock Sr. is generally considered to have been Birmingham's best token designer, his son John Gregory Jr. appeared likely to eclipse him at one point, having engraved the dies for several private tokens at the turn of the century when he was not even ten years old. But while John Gregory Jr. is listed among Birmingham's "artists" in Bisset's *Magnificent Directory* (1808), for which he supplied several engravings, nothing has been heard of him since then, and it's feared that he may have died even more prematurely than his father.[29]

One last address worth mentioning before we head back to Snow Hill is the former residence of Charles Twigg, who lived a few doors from Hancock on Hospital Street. Although he made no tokens Twigg produced various other numismatic products, including Royalist medals and pocket calendars, at his button factory on Harper's Hill, near St. Paul's (Mitchiner 1998, p. 2005). He was also one of the entrepreneurs responsible for erecting the steam-powered rolling mill that now belongs to George Muntz. That mill occupies a very important place in the history of steam power. But let's go back to Water Street to have a good look at it before I say why.

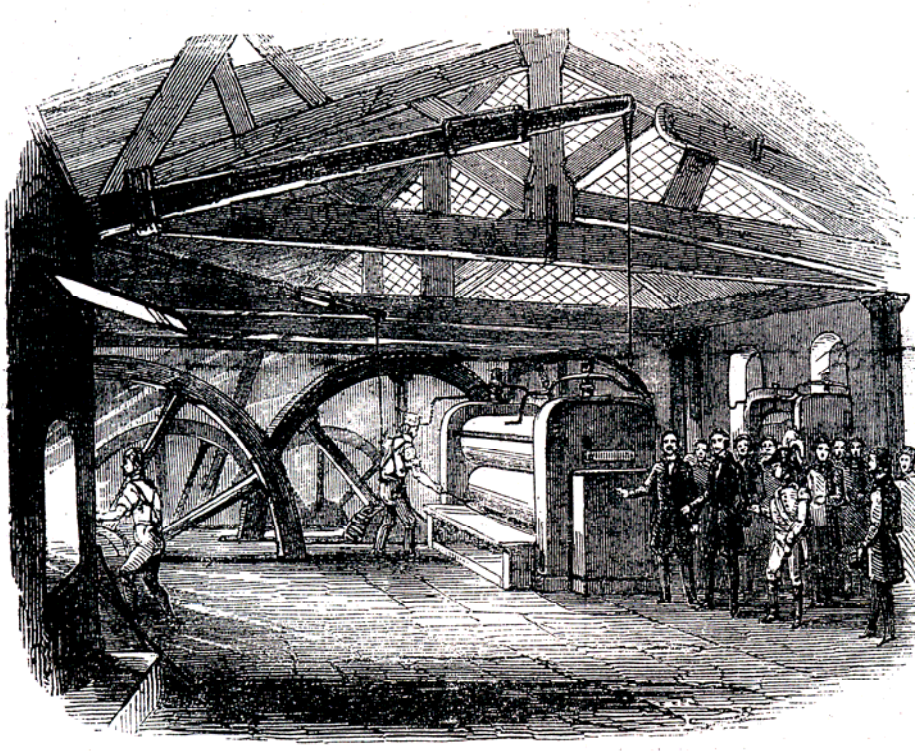
Pickard's Steam Engines

Standing at the corner of Snow Hill and Water Street, we are once again facing Parker's steam-powered corn mill. It is powered by the world's second-oldest rotary-motion steam engine, which was erected in 1783. The mill's builder and original owner was James Pickard, whose son Thomas owns the ironmongery warehouse we passed on

[29] No one has been able to figure out what became of the younger Hancock, including token collector and cataloguer Thomas Sharp, who looked into the matter, unsuccessfully, in 1834.

Bull Street. Pickard also had a hand in building Birmingham's, and the world's, *first* rotary steam engine, which we'll come to momentarily. But Pickard's Corn Mill and Bakehouse, as Parker's used to be known, is itself of considerable interest, partly because of its fine brickwork, but mainly because it was the target, on three separate occasions during Pitt's "War for Humanity," of mob attacks triggered by grain shortages. The first of these took place in 1795, when rioters (most of them women, by the way) stormed the place inflicting heavy damage and destroying Pickard's account books after hearing the rumor that Pickard had buried a large stash of grain. At last the King's own Dragoons arrived, read the riot act, and proceeded to arrest several mob-leaders, who were being taken to the Peck Lane dungeon when the mob renewed their attack, forcing the soldiers to shoot and kill one of the rioters. In September 1800 virtually the same thing happened again, only this time mill employees themselves fired upon the looters, killing four. Finally, in June 1810, when bread was once again in short supply, yet another mob assembled at the mill. On that occasion, however, the Handsworth Volunteer Cavalry showed up on time to disperse the crowd before it turned violent, and without firing a single shot.

The other rotary steam engine for which Pickard was partly responsible belonged to what's now Muntz's rolling mill, at 65 Water Street. Although there are now 17 steam-powered rolling mills in Birmingham, for many years this mill was the town's only local source of manufactured metal, most of which came from water-powered mills located some distance away. George Frederick Muntz took the mill over from his father upon the latter's death in 1811, when George was only 18. These days he's busy developing, here and in Swansea, his "yellow metal"—an alloy much cheaper than copper that's intended to replace it in sheathing ship's bottoms.



Inside Muntz's Mill

Muntz keeps his men busy six full days a week—there are no St. Monday's or short Saturdays here. And his mill is open to the public. So let's have a look. As the manager waves us in the first thing we see is the base of the mill's steam engine, with its central support wall about three stories high, made entirely of ceramic bricks, next to a smaller brick base from which the round top of a huge (13-foot diameter) haystack boiler, made from riveted plates of mild steel, protrudes.[30] Some workmen tend to the engine, while others move about here and there. One of the latter is intercepted by a great strapper of a man--he looks to be almost seven feet tall—with baggy clothes and a swaggering gate, who greats him with an earful of loud and (I must say) rather coarse language. Were the giant not clean shaven, I'd swear it was Muntz himself.[31] But before we can settle his identity

[30] These details are from Hulse (2001), who has lovingly re-constructed the Pickard-Wasbrough-Twigg engine in miniature 1/16 scale, individual ceramic bricks and all.

[31] In fact it is: the bushy black beard that occurs in Muntz's portraits will not sprout until 1833 (Edwards 1837). Seven years from then, Muntz will become Birmingham's second M.P., thanks in

our guide ushers us upstairs—and away from all the expletives-- where we find ourselves surrounded by the upper-halves of several rapidly spinning flywheels, each of which is as high as a standing man. Connected to the nearest is a huge pair of whirling cast-iron "breaking down" rollers, which appear to be crouching beneath the building's heavy roof trusses. We watch as ingot-rolls cast from copper cake are repeatedly passed through the rollers until they become too hard to work. The flattened metal strips are then annealed in the mill's huge furnace, located across the room, until they become ductile again. The blood-red metal is then removed from the furnace, allowed to cool somewhat, and passed through the breaking-down rollers again until it is ready for a final, cold run through a second pair of polished steel rolls. Once finished, the flat, shiny sheets will be delivered to local factories, to be turned into toys, buttons, and numismatic products.

What is now Muntz's mill was the brainchild of James Pickard and an inventor named Matthew Wasborough (or Wasbrough), of Bristol. Wasborough had had the idea of replacing a standard Newcomen reciprocating engine's connecting rod with a rack, which could be made to mesh with a large geared wheel fitted to a drive shaft. Having patented this device, along with a flywheel, in 1779, Wasborough joined forces with Pickard to erect a prototype engine. Pickard in turn convinced Charles Twigg—the button maker who lived near Hancock, on Hospital Street—to grease the venture's wheels. Boulton and Watt, after hearing a Soho employee's report on the engine, dismissed it as a "noisy, disorderly bad machine," and went calmly to work developing their own rotative-motion engine. Then Pickard drew an ace from his sleeve: in August 1780 he managed to

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part to his metal, which he patented in 1832 and which made him a power of money. That Muntz was a founding member of the Birmingham Political Union also made him an ideal successor to Thomas Attwood, who resigned in 1839.

patent a rotary-drive mechanism consisting of a quiet, orderly crank—a rather obvious solution Watt himself had considered. The patent infuriated Watt, who is supposed to have complained (with an inconsistency so evidently driven by despair that it is almost touching) that (1) no patent should have been granted for something any fool could have thought of and (2) that Pickard had stolen the idea from a Soho employee who blabbed unwittingly to one of Pickard's spies between quarts of stingo at a Handsworth ale-house.[32]

The Pickard-Twigg-Wasborough engine was originally built largely for the purpose it still serves, that is, to power four pairs of rolls. But the 14 horsepower it generated when first erected were applied to other purposes as well, as is made clear in a 1783 advertisement published in *Bailey's Directory*:

> Charles Twigg and Co., Rollers of metal, Grinders and Borers of Gun Barrels, at the Steam Mill, Snow Hill. N.B.— This mill is erected for the above purposes, and also for the polishing of steel goods, finishing buckles, buckle chapes, and a variety of other articles usually done per foot lathes. The whole is

[32] As the late Sir Eric Roll (1930, p. 109) observed, "the fact that Watt, usually over anxious to secure patents for the slightest improvement, had not done this [with respect to his rotary-motion drive mechanism], speaks certainly against him."

Boulton and Watt hagiographer Samuel Smiles (1866) has Pickard himself slip into the Wagon and Horses Inn during the summer of 1780 to suck the brains of loose-lipped Soho mechanic Dan Cartright . Having thus learned about Watt's rotative-engine plans (which, according to Smiles, supplied Pickard with his first inkling that steam could actually be used to rotate a shaft), Pickard is supposed to have posted straight to London to secure his crank patent. This is all "patent nonsense," to make a bad pun, or what is known in Birmingham as a bag of moonshine: there is little doubt that Pickard and Wasborough were, in fact, the original inventors of the rotary steam engine (Prosser 1881, pp. 32-3; for further details see Hulse 2001). But the damage to Pickard and Wasborough's reputation has proven difficult to repair, with numerous writers since Smiles neglecting them entirely and crediting Boulton and Watt with what was in truth their invention. Some imagine that Watt's alternative "sun and planet" apparatus, which he came up with to circumvent Pickard's crank patent, was somehow better than a plain old crank (it was not, and it wasn't Watt's own invention either, for that matter), while others (e.g. Skipp 1997) actually go so far as to credit Soho with having built the Pickard-Wasborough-Twigg engine.

> worked by a steam engine, and saves manufacturers the trouble of sending several miles into the country, to water mills (quoted in Aitken 1866, pp. 242-3).

Twigg and Co. also "let" power to other users, by directing it through shafts to nearby workrooms that could be rented by the day or week; and Muntz has followed him in this: right now, for instance, he lets power to Joseph Gillott, who runs Birmingham's biggest steel-pen factory.

Twigg's fate shows how, in those crueller times, even relatively progressive businessmen could be dealt a bad hand. In 1793 he found himself heavily in debt; and over the course of the next five years, as he explained to Matthew Boulton, he'd had "to relinquish every Species of Property to satisfy those Gentlemen to whom I was indebted." At last, to avoid ending up in debtors' prison, and to provide for his wife and seven children, he was compelled to announce his bankruptcy in the *Gazette*, which meant selling off his last important asset: the rolling mill. It was on this occasion that he penned a despondent note to Boulton, his old client and friend, lamenting his fate, while reminding him to credit his account for rolling he'd done for Soho just before going south (MBP 257/147); and that sad note is the last we hear of the now-forgotten sponsor of the world's first rotary-motion steam engine.

To Summer Row by Way of Lionel

It is time we left Muntz's mill, continuing east on Water Street. At the intersection with Livery Street we consider heading a block south to look at Soho's warehouse and showroom: a handsome building built in 1787, to designs by Samuel Wyatt, where some of

the factory's fancier small products are on display.[33] But time is pressing, and I have something better in store, so we continue along Water Street to Church Street, so named because it runs between St. Philip's Church to the south and St. Paul's Chapel to the north. We make our way back across the canal to St. Paul's Square. Time's running short, so we don't have time to visit the Chapel itself, where Boulton sat at pew No. 23 at the front, and Watt had purchased (but seldom occupied) No. 100 toward the back. We'll therefore have to miss its beautiful "Conversion of St. Paul" in painted glass, the handiwork of a Soho artist named Francis Eginton. Instead we must settle for a quick look around the Square, which is essentially unchanged from 17 years ago, when its respectable-looking residences were home to at least three nineteenth-century token makers: Henry Dunbar, who churned out 3 tons of pennies a week for seven months at No. 24; and Samuel and Thomas Aston, who made Birmingham Workhouse pennies and thruppences at No. 33. Another former St. Paul's Square toymaker, John Lilly, was invited to bid on the Birmingham Workhouse commission, but did not end up making any workhouse tokens.

Now let's head back south, to Lionel Street, which we'll follow west all the way to Summer Row. The small, well-tended gardens in front of some of the houses here, once typical throughout town, are now few and far between. Beyond them, and just before Summer Row, is the court of No. 4 Lionel, which houses the die-sinking establishment of George and William Henry Wyon, of the famous Wyon clan. We'll have a later opportunity to see dies being made, so let's continue to Summer Row, turning left on it until it becomes Congreve Street. This brings us to the western end of Great Charles Street. This stretch of street boasts some of Birmingham's finest Georgian doorways, with

[33] The building was demolished in 1950, having been badly damaged by bombs during World War II.

their open pediments and fanlights. It was also home to several of the town's most important commercial mints.

Although nothing now hints of the fact, no. 9, across the street to our right, was the site of the Parys Mint Company mint, Great Britain's third-most fecund 18th century mint after the Royal Mint and Soho. No. 7, two doors further to the right (which is one of the street's older and more impressive buildings) was home to William Bullock's metal stamping and piercing shop, which struck nineteenth century tokens; Bullock also supplied counterfeit colonial coins to the West Indies, and did so with impunity, since manufacturing such counterfeits wasn't illegal (Withers 1999, p. ??). Ledsam & Sons button manufactory, of which I spoke earlier, is just to the left of the Parys Mine mint site. Next to it, at No. 11, is where John Gregory Hancock Sr.'s former apprentice, Joseph Stubbs Jorden, made picture frames as well as between one and two tons of copper tokens, including the Glamorgan halfpennies, commissioned by Jorden's father, a Staffordshire ironmaster (Dykes 2001, pp. 125-7).

The block to our left housed several more mints, so let's head that way. Nos. 20 and 22, which are presently occupied by a couple small-scale button makers, a tin-plate worker, and a merchant, among others, were once the addresses of the brothers John and Obadiah Westwood, who were running separate button-making businesses here when John took up token making in partnership with Hancock. Some time after Obadiah took over his deceased brother's part in that business his son, John Westwood Jr., entered business with him. The father and son team remained here until 1797, although they quit making tokens in 1794. Obadiah retired a couple years back. As for John Westwood Jr., he's presently listed as a "bone button manufacturer" on Great Brook Street. But not long ago

he tried to get back into coining, as we know from a letter he sent to Matthew Robinson Boulton in March, 1821:

> You may recollect the name of Westwood. My Uncle, the late Mr John W. was well known in Birmm as a general Manufacturer and maker of Medals & Coins. The original Copper Tokens made in the Years 88 to 92, were wholly made by him or your Father. ... Since his Death I have been engaged in the Medal & Coin Business occasionally and presume to have competent knowledge of these things.
>
> [Should you] require a person Competent to undertake the Management of the [Soho] Mint, or, An Engraver to accompany it, I should have no objection to take Either department, If sufficient inducement offers itself in the terms to be given (MBP 261/73; March 26).

Poor Westwood. He presumably didn't know that Soho made nothing but blanks—not a *single* finished coin—since June 1813, and that in that last year of actual coining the mint account showed a *loss* of £1300 (Doty1998, p. 63). Soho was to resume coining again, for Great Britain's tiny South Atlantic outpost of St. Helena, in June of 1821. But that new coinage was as unhelpful to Westwood, who never heard back from Boulton, as it was to Napoleon, who died in May.[34]

Another 18th-century token maker, Joseph Kendrick, handled only a few token commissions of indifferent quality before reverting to button making, which was what he

[34] Westwood's failure to land a job at Soho in 1821 may have had something to do with the decision of his son, John Obadiah Westwood (1805-1893), to give up the engraving business (in which he'd been serving as an apprentice) that same year. If so, the father's disappointment proved a blessing in disguise, for John Obadiah became a celebrated entomologist. Although he couldn't bring himself to accept evolution Charles Darwin called him "my father in Entomology."

was up to, according to Chapman's *Directory*, at No. 36 Great Charles in 1801. The same source suggests that Great Charles Street may also have been home to still another token-making enterprise: James Pitt was making buttons here (as well as at 29 Newhall Street, where he had a partnership with someone named Cooke) in 1801, having manufactured several series of tokens during the later '90s. Among the tokens were halfpennies Pitt manufactured, using dies prepared by Thomas Wyon, for issuers in Portsmouth, Portsea, and Crewkerne. As noted earlier, Pitt may also have been one of the three cartwheel counterfeiters whose operation Boulton's men raided back in 1799.

Continuing one more block along Great Charles Street, beyond the Newhall-Street rise, we eventually return to Church Street. A token die engraver named Charles James is supposed to have worked somewhere around here during the 1780s. I say "somewhere" because his actual address, "Cart's Yard, Church Street," is one I haven't been able to find on any map: the closest thing is a street, now called Carr's Lane but once known as "God's Cart Lane"; but it is a quarter-mile from here, near Dale End. Anyway, James was somewhere in Birmingham until 1790, having moved at that date to London where, at 6 Martlett Court Bow Street, he worked chiefly for Peter Skidmore—a notorious maker of mules.

Say, it's four o'clock, and I'm baked. How about grabbing a bite to eat and a pint of ale, or a "point of oil," as the locals say? Perhaps the blue apron coming our way can direct us to a good place.

"Say, mate, where's the nearest good tap?"

"Well," says he, pointing north, "there's a toidy smoke shop right anight 'ere."

"Much obliged!"

Did you see how *green* that fellow looked? That's brass powder—he must have come from one of the brassworks on Lionel Street. Ah, here it is: the Red Lion, a handsome, three story building with red bricks above and stucco below. The columned entryway, on Bread Street, is surrounded by two large, rectangular windows. A sign above it shows a lion standing on its hind quarters, holding a bumper of bear and smoking a pipe. Let's have a look inside.

At the Red Lion[35]

Smoke-shop indeed! Upon entering the tavern, we find ourselves in a small apartment—about 20' by 14' with a low eight-foot ceiling—in which no fewer than 25 men are drinking ale and puffing on pipes. At suppertime (around seven) the place will get even smokier, with perhaps twice as many clients crowded into the tiny space. Fortunately there's a less smoke-filled room reserved for eating customers. We make our way there post haste.

I'm feeling like some leg of mutton. Not partial to it? There's always reed and cowtail. It's said to be the town's most popular dish.

Here comes the landlady to take our order.

"Owdo, gennelmen. Wot be yer pleasure?"

"Mutton for myself. And some reed and cowtail for my friend."

"A thruppence cut?"

"Why not? Oh, and two pints of your best ale, please."

"Oil fetch them directly."

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[35] Having failed to uncover a description of the Red Lion's interior, I offer instead that of a typical "smokehouse," which may or may not resemble the Red Lion's. The Red Lion itself is now long gone, although a Victorian-era pub called the Old Royal occupies its former site.

So, we've managed to examine the former whereabouts of most of Birmingham's known token-makers. We didn't bother with James Good (or Goode, as his name is sometimes spelled) and Samuel Waring, because both were small-scale producers whose addresses, on Lench Street (behind St. Mary's) and Bradford Street would have taken us too far out of our way. More importantly, we skipped the most famous private mint of all: the Soho Mint, which is still in business, with Matt Robinson Boulton at its helm.

So why not go there? For one thing, it's almost two miles from here, meaning that a rumbler there and back will lay us at least a crown each. And if we did bother to go the mint we'd see wouldn't be the one that made coins for the British government starting at the turn of the century. That mint, remember, was shipped to Bombay five years ago, when Matt Boulton decided to quit the coining business. The sails of the vessel bearing Soho II eastwards had scarcely sunk below the horizon when Boulton changed his mind: the governments of Argentina and Colombia had approached him with coining offers big enough to pay for a new mint, topped off by Colombia's offer to purchase the mint once Boulton had done with it (Doty 1998, p. 66). The coining fees would, in that case, be almost pure gravy.

In fact the mint came close to being pure gristle, for while it was being built disaster struck, in the form of the Crisis of 1825. That event soon spread its bad tidings as far as Latin America, where it put paid to further coining contracts as well as to Colombia's plans for a new mint. Boulton immediately suspended construction of Soho III, which was nearing completion and which had already cost him over £7500. The mint building itself, with its four coining presses (half as many as in the former mint), was already finished, as was the new cutting-out room, which had been placed in the middle of the old Latchet works. Finally, an underground tunnel almost two-hundred feet long had been dug,

containing a cast-iron drive shaft that was supposed to connect the cutting-out apparatus to a new steam engine. Only the new steam engine itself was lacking, which Boulton dared not erect until he had some big orders. So he ended up with a mint that was only capable of striking blanks, and striking them manually at that; and his mint has been limping along in that state ever since, its sole revenues being from blank sales to the U.S.

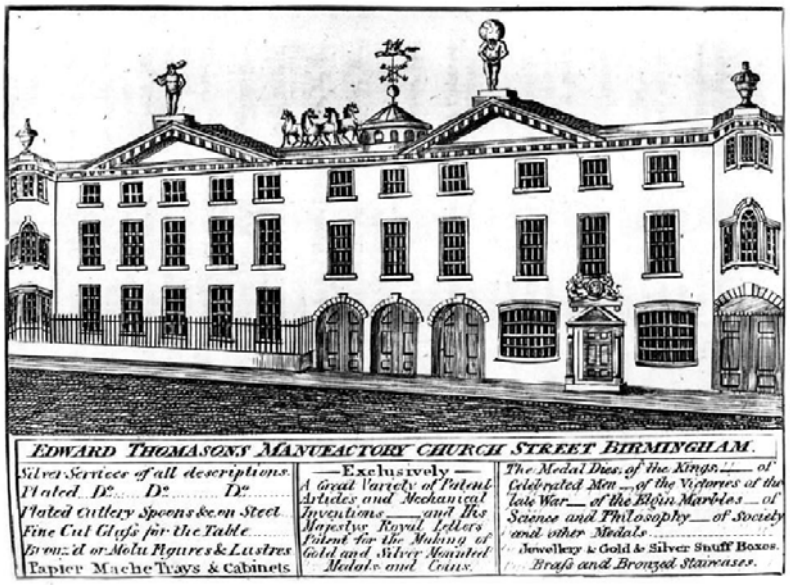
Perhaps a new and only half-finished Soho mint would still be of interest. But there's yet another hurdle—and it's a big one: Soho has been closed to the public since 1802, when Matt Boulton decided that his father's open-door policy, though fine for showing off fancy equipment, was making life rather too easy for industrial spies. Exceptions are occasionally made for persons unconnected with coinage or the metal trades, but even these have to be introduced by respectable residents. Unless you've got some personal contacts at Soho, I don't see how either of us can get in.

Talk about having a face as long as Livery Street! But don't be glum. I thought you might want to see the insides of an actual commercial mint, so I've made arrangements for us to do just that. What? Well, although it's true that Soho is the only former commercial mint that's still making coins, that doesn't mean there aren't other former commercial mints that we can visit. The esteemed Edward Thomason is still making numismatic products—medallions, chiefly—in his factory right around the corner on Church Street. And guess what: his showrooms and workshops are open until 7'oclock, and are admitting members of the public as we speak.

So what are we waiting for? We're waiting for you to finish your tripe!

In Thomason's Manufactory

Thomason's place is at No. 28, at the upper end of the street. It is distinguished by twin pediments topped by statues of Atlas (holding up about 300 pounds of Portland cement, as well as several pigeons) and Hercules (holding a menacing-looking club, and several more pigeons). Between them are four bronze horses—painstaking miniature replicas of the ones on St. Mark's basilica, with their inevitable companions. Behind and above them a winged Pegasus leaps over the building's wind-vane.



At street level we pass three arched doorways on our way to the rectangular showroom entrance. Inside we are met by a suite of twelve showrooms, each with its own attendant, containing massive displays of Thomason's workmanship in gold, silver, silver plate, and bronze. They are mostly highly ornamental and costly pieces—a far cry from the "Brummagem" wares for which this town was once so notorious. The very first room is entirely dedicated to what many consider Thomason's masterpiece: the so-called Warwick Vase, a magnificent full-scale copy of Lysippus's celebrated original. The porphyric acid ground and verdigris details aren't painted on: like its predecessor it is cast in solid bronze—

ninety-hundredweight of it. As tall as Muntz and twenty-one feet around, it cost four-thousand quid and took Thomason a full six years to finish.

Next we enter a room devoted to bronzed Corinthian capitals and balustrades for staircases and such and another featuring works in papier machée. After this comes the so-called gold and silver room, a very lofty space lit by three skylights. Under one of these stands a somewhat larger-than-life-size statue of George IV in his coronation robes, a work that, by all accounts, bears a very-good resemblance to the King. Finally we arrive at a conservatory filled with medals and medallions of all sorts, executed in gold, silver, and copper and displayed in glass cases. Among them is a set of twenty-six 15mm medalets, sold in a cylindrical container and commemorating Wellington's victories in the Peninsular War, a set of forty-eight medals, displayed in five folio-size leather volumes, depicting scenes from the Elgin marbles, and, of particular note, a series of sixteen "Philosophical and Scientific Medals," the last four of which depict stages in the evolution of the steam engine, from Savery's engine to Watt's double-acting rotative model. (No medal for poor Pickard and Wasborough, alas.) These last medals are the largest of a series ever struck, and are sold in a Morocco case resembling an imperial Octavo volume. (A magnifying glass is thrown into the bargain.) The displays here also contain Thomason's collection of medal dies, which is said to be the largest in Europe save for that belonging to the King of France.

Next to the medal room is a long gallery, one side of which is lined with twelve windows in the Gothic style, the other with lusters and other cut-glass objects as well as a splendid Wellington shield; beyond it are five more rooms devoted mainly to silver-plated wares. Finally we come to the last of the showrooms, which features a various patented items, including several versions of Thomason's corkscrew.

Ah—here comes a guide to lead us through Thomason's workrooms. As we follow him past a small courtyard and into the manufactory's rear quarters the surroundings become austere, and the noise level increases substantially: now and then our guide has to holler in order for us to hear him. We proceed through a series of twenty-one separate workshops, arranged conveniently one after another. As we are especially anxious to see the button-making and medal departments, and pressed for time, we rush through the first nine shops, catching brief glimpses of workers engaged in:

1) the assembly of ivory- and pearl-handled cutlery;

2) silver plating of steel table utensils;

3) bronzing of copper vases, lamps, etc.;

4) making silver mounted epergnes and candlesticks;

5) polishing various silver items;

6) cutting "worms" onto metal shafts;

7) drawing brass tubes (for boilers);

8) sculpting (including the preparation of a splendid shield of Achilles which, we learn, is to be finished in gold plate); and

9) hand-burnishing plated wares.[36]

We thus arrive at the button shop, the center of which is filled by rows of women who at first appear to be examining specimens in microscopes, but who are in fact forming and burnishing small vest buttons using hand-operated punches and presses. Various other operations are performed along the walls of the workshop, including the smoothing of button-edges using treadle-worked lathes and the painting of finished buttons with a

[36] This list, along with many other details concerning Thomason's workshops, comes from West (1830), 177-79.

silver-colored amalgam that turns bright gold as it dries. Most interesting of all is the machine, patented by Ralph Heaton I in 1794 (the year Ralph Heaton II was borne), for making button shanks out of steel wire. It draws a length of brass wire from a coil, bends it into a loop, cuts it, flattens the points so they lie flat on the back of the button, and spits out the finished product—all in a matter of seconds. At a nearby table a women clips the shanks to the backs of finished buttons using a piece of bent iron, adds a dab of solder, and then bakes the assembled buttons on an iron plate until the solder melts.[37]

Just past the button shop is the stamping room, where our attention is drawn to a row of tall machines resembling guillotines (whose invention they helped inspire). Each is tended by three men—the "stamper" himself and two "pullers." The pullers are responsible for hefting a hammer or "ram" weighing a hundredweight or so along a pair of iron rods. Upon reaching the rods' summits the rams are allowed to drop with great force onto beds upon which dies have been placed, imparting impressions of wreathes, flowers, figures, and various other ornamentation onto pre-shaped sheets of silver and plated brass. At nearby tables boys "cob" the stamped pieces, cutting or brushing off scales and rough edges:

> Loud falls the stamp, the whirling lathes resound;
> And engines heave, while hammers clatter round:
> What labour forges, patient art refines,
> Till bright, as dazzling day, metallic beauty shines.[38]

[37] The description of Heaton's machine and other aspects of button making is based on Anonymous (1852, pp. 346-7) and on a passage in the travel journal of Scottish author Mary Brunton (1778-1818), who visited Thomason's works in 1815. See Brunton (1819, pp. 213-14).
[38] Morfit, in West (1830, p. 118).

Beyond the stamping room we pass several more workrooms in which molten silver and other metals are cast into ingots of various sizes, copper is clad with silver (using a special process patented by Mr. Thomason), and brass is founded into statues—like that of George IV seen in the showroom. Next comes the brazier's shop and then, at last, the medal department. Here medals are being manufactured using powerful presses equipped with circular wheels or "flys," or (for some older and less-powerful models) horizontal arms equipped with hundredweight lead balls at each end. Such presses are preferred to drop hammers whenever a more precisely controlled and longer-lasting force is needed, as is the case for the deeper and more precise impressions applied to medals, medallions, larger metal buttons, and coins.

Each press consists of a frame supporting a thick, vertical threaded screw, which is turned by means of its heavily-loaded fly or arm. The upper end of a die is fixed to the bottom of each screw, with its counterpart on a bed-plate below. Two or (in the case of the larger presses) three men attend each press, giving its fly or bar a smart hike, causing the upper die to spin its way through several revolutions to the lower one, onto which a prepared metal blank or planchet has been laid. The violent collision of blank and dies produces a finished medallion that's automatically ejected into a hopper upon the rebound of the fly. The rebound also causes a new blank to drop onto the lower die from a tube-like mechanism. The men then set the presses agate once more, banging along this way, all of a puther, for fifteen-minute stretches, between which they rest for a spell. Now and then the spell lasts a little too long, eliciting mild imprecations ("Quit padgelling, ye slacken-twists! Fish! To it! T'ain't Saint Monday, ye know!") from the gaffer-in-charge.

Approaching one of the larger presses, our guide reaches into its hopper, withdrawing a good-sized (73mm) medal bearing a Biblical scene, taken from an old-

master, on its obverse, and an inscription on its reverse. It is part, he tells us, of a new series of which Mr. Thomason is especially proud. When completed sometime next year, the series will include 60 medals in all, each bearing a different Biblical scene and corresponding text. Thomason hopes that it will do as well as his Elgin marble series, which got swooped up in no time. He intends, by way of marketing, to send a complimentary set to every Royal family in Europe.

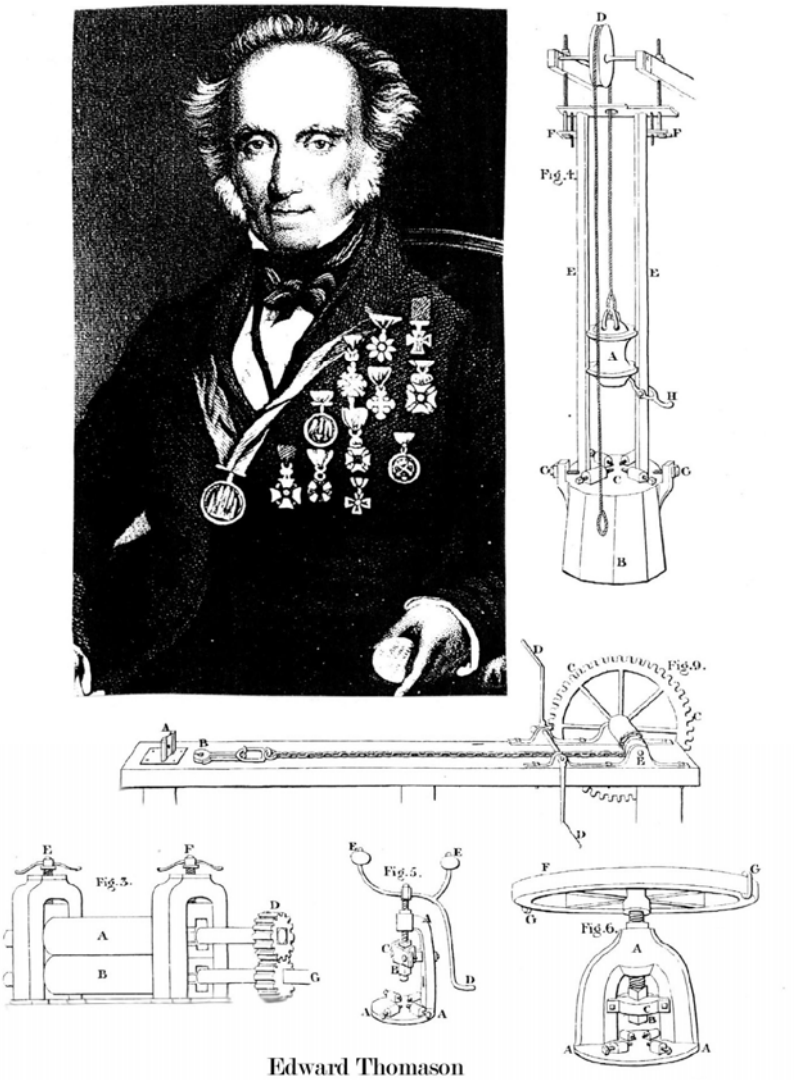
Next to the medal department is another room equipped with several of the smaller screw presses, which are employed in making livery buttons—a good crew can manage about forty a minute from a single press—bearing coats of arms, crests, and so forth. Each press is equipped with a bespoke die, one of thousands on hand, each made especially for a single blue-blooded client. After the livery-button shop comes the lapidary room which leads, naturally enough, to the jewelry department.

Finally we come to Thomason's die shop, where we witness the rather involved process by which the design from a large hand-engraved model is copied, in reverse and on a smaller scale, on steel using a French invention called a "portrait lathe." The resulting master hub is then used to strike a master die or "matrix," using a screw press; in the case of larger dies, such as those for medals, a dozen or more strikes or hubbings are required to complete the impression. Between each hubbing, the matrix die is placed into an annealing furnace until it becomes red-hot. Once the hubbing process is complete, the matrix die is allowed to cool to room temperature. The matrix die is then used to make several working hubs by means of a similar procedure. Finally, each working hub is used to make hundreds of working dies, which are the ones we saw being employed on the screw presses in the medal and livery-button departments.

As for the master dies, many of them, including the ones for the Elgin Marble and Biblical Scene medals, were engraved at Thomas Halliday's workshop at 69 Newhall Street, where Halliday also engraved most of the dies employed by Thomason for his 19th-century tokens.

* * *

The last of Thomason's workshops brings our tour to a close, so let's get ourselves back to the 21st century. There we can discuss what we *didn't* see at Thomason's factory, and why we didn't see it.



Edward Thomason
with Machines from His Workshops