STAFFORDSHIRE POTTERY AND ITS HISTORY

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By

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PREFACE

THIS account of the potting industry in North Staffordshire will be of interest chiefly to the people of North Staffordshire. They and their fathers before them have grown up with, lived with, made and developed the English pottery trade. The pot-bank and the shard ruck are, to them, as familiar, and as full of old associations, as the cow shed to the countryman or the nets along the links to the fishing population. To them any history of the development of their industry will be welcome.

But potting is such a specialized industry, so confined to and associated with North Staffordshire, that it is possible to study very clearly in the case of this industry the cause of its localization, and its gradual change from a home to a factory business. The rise of capitalism, the attempts at revolt on the part of the workers, the increase of machinery and steam power, all these can be studied very closely in the potting industry, just

because the history of the district is the history of potting and of the inhabitants' whole lives. So that I venture to hope that many students of history and of sociology will find such a trade history as this of some value in their researches.

The collector, too, may I hope find his special studies assisted by the identification and linking together of the relationships of the old master-potters, of their inventions, and factory sites and dates.

A hundred years ago Simeon Shaw wrote a book of this nature. It had its merits, but since then research among ancient documents, systematic collection and excavation, the publications of the William Salt Archæological Society, and, above all, the modern work of such men as William Burton and Professor Church, have made it possible to restate far more exactly what happened, and when, to potting in North Staffordshire. Mr Burton's "History and Description of English Earthenware" and his various works on porcelain have been drawn upon very largely in the following pages.

Both to him and to Professor Church, M. Solon

and to many others, who have given me so much personal assistance in this work, I desire to express my gratitude. I can only regret that my own contribution to original research on the subject has been confined to the Tunstall Court Rolls, kindly lent me by Mr Sneyd, and to the MSS of my great-great-grandfather, Josiah Wedgwood, now in the museum of the Wedgwood firm at Etruria. Lastly I would express my indebtedness to my brother Frank Wedgwood, who has read through the proofs and made many corrections, such as would occur to one whose whole life has been devoted to the practice of the art of potting.

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CHAPTER I.

THE CREATION OF THE POTTERIES.

IN no country is there a district so utterly associated with one trade as is the North Staffordshire Potteries. One even speaks of the Potteries in the singular as of a pure place-name. If you spoke in Timbuctoo or California of the Potteries, none could doubt that you were thinking of North Staffordshire.

The reason is not that the district is or ever was given over entirely to pot-banks. Potting was incidental, a pastime in the middle of agriculture; as potting grew, so coal and iron mining grew too. The district is less confined to potting than Walsall to saddlery or Sheffield to knives. Even a thirteenth century reference to Walsall will expose harness; it is difficult to trace pots in the Potteries before 1650; you find only bloom-smithies and sea-coal mines. Potting is neither so ancient here, nor so exclusive as to have made the name. The real reason of the place-name, the Potteries, is that

no man who valued time could say Tunstall, Burslem, Hanley, Stoke and Longton, whenever he wanted to refer to one place—the place where men made pots—and few people outside the five towns ever wanted to speak of them separately, or could even distinguish one from others.

The first reference to "the Potteries" will be found in the latter half of the eighteenth century; before that time it was hardly necessary to refer to them at all.

The area where pots were made in North Staffordshire has always been peculiarly local and circumscribed. It extends, and extended, in a line from Golden Hill to Meir Lane End. Occasionally, at times, we hear of Pot-works at Red—or Ridge—Street, at Bagnal or at Bucknall, outside this narrow area. They only receded finally from Chesterton during the last century. But, generally speaking, Staffordshire potters have persisted always in making pots just where their fathers made them before, in the hilly land between the Foulhay Brook and the sources of the Trent.

There was no need in old times for the people

who made pots to specialize in one district. The art of potting is as old and as universal as the art of cooking. In old times it was as simple. Like most modern trades it was practised at first, and anywhere, as a branch of housekeeping. Every family made what pots they required for their kitchen, and one can see such rude earthenware utensils among the miscellanea of any excavation. And like most modern trades the development from the housekeeping to the manufacturing stage meant specialization in particular districts.

But why should potting have settled in the Potteries?

So long as all that was wanted was clay and firewood, almost any place would do. In England, it was about the year 1600 that the time arrived when brushwood became rare and costly; clay and coal were then found to be the necessaries of a "potteries." North Staffordshire had both. Burslem, and it is Burslem alone which one need consider in this problem of the first cause, had something more than clay and coal. The land was split up into a great number of small copyhold owners, and immediately after 1600 the copyholds were

enfranchised. There were no demesne lands. The people were independent, both of big farmers and of great landlords. There was security of tenure, and every opportunity for initiative—initiative which could not then take the shape of intensive cultivation.

So we find in Burslem and Tunstall at the beginning of the seventeenth century clay, coal and the opportunity. By the end of that century the next requisite was to hand—skilled workmen. By the end of the next century the last requisite of trade was in place—the cheap water transport of the Trent and Mersey Canal.

It is well known that the safest way to test the presence in early days of particular trades or forms of employment is to study any local lists of the surnames of common people of the thirteenth and fourteenth centuries. We find our first such list for the Manor of Tunstall (which included Burslem) in 1299.* Not a single name that one can associate with potting is to be found. A similar list for Audley of the same date shows a Robert le Pottere, Thomas Potinger and Richard le Throware.

*Staff. Cols. xi. N.S. p. 261-2.

Probably most similar lists for that date would provide some such solitary reference to so common a trade, and I do not jump from this to the conclusion that Audley was the real mother of the Potteries. There are Subsidy Rolls giving Tunstall taxpayers in 1327 and 1333; still no *Potter* is to be found. We have also now available a varied selection of the Tunstall Court Rolls. The earliest, 1326, has nothing that one can twist into a reference to potting; but then we can collect in subsequent years the following:—

1348. William the Pottere gives 6*d.* for licence to make earthern pots (*facere ollas terreas*).

1353. Thomas the Throgher is amerced for a default at Chatterley.

1363. John Pottere is presented for an affray in Borewaslym (Burslem).

1369. Robert le Potter gives 12*d.* for licence to get earth for making pots until the following Michaelmas.

1372. Thomas le Thrower takes up land in Thursfield.

1405. Robert Potter is recently dead in Burslem.

1448. Richard Adams and William his brother are

amerced for digging clay (*argillium*) in the common road between Sneyd and Burslem.

In several of the leases of land by copy of Court Roll of the fifteenth and sixteenth century the right to dig marl or clay (*argillium* or *luteum*) is conceded, but I suspect it was usual even then to use such marl as manure. The filling in of pits or lakes (*laca*) in the roads is also a constant cause of trouble in these Rolls, but they may have been due to honest wear and tear and not to the temptations of a cheap raw material.

It should be mentioned however that we have hardly one quarter of these early Tunstall Court Rolls, and must not assume that these few casual notices of clay or pots is exhaustive. We now skip a century and pass to:—

1549. The jurors present Richard Denyell for that he dug mud called clay (*fodit luteum vocatum cley*) in the King's way at Bronehills-lane (Brownhills), and in Burselem.

1604. Penalty laid (i.e. *sub pœna*). It is ordained by the jury that any person who digs "*argillum vocatum* clay" in a certain way called Wall Lane, which shall be prejudicial to

the passage by that way, or if he do not fill up the same well and sufficiently, shall forfeit to the lord 6*s.* 8*d.*

So far still no mention of potting. Various leisured people began now to describe England, relating what they saw and heard. Many of them dealt with Staffordshire, but they notice no special and curious feature about the North Staffordshire moorlands. Leyland in 1537, Camden in 1586, Erdeswick in 1590, say nothing of a "Potteries." Speed's list of the Shire products in 1625 omits pottery.

It is just possible that some of the impetus for the local manufacture may have come from the dissolution of the monasteries. There is reason to believe, judging from the remains at the Cistercian Abbey of Hulton, that the monks there made such encaustic tiles as are to this day called Cistercian. Now Hulton Abbey and the Abbey's grange of Rushton both lie in Burslem parish. Some rudimentary practice in the art and mystery of potting may well have come from the seven* scattering

* There were only seven monks at Hulton at the dissolution in 1536.

brethren of this dissolved monastery, and may account in part for the development which was to come.

For now we begin to find potters thick on the ground in Burslem.

In legal documents the practice grew of adding after any man's name, his trade; leases, depositions, wills, all show this. After 1600 one would certainly expect to find some trade description, and at last, in 1616, we find our first "potters."

1616. Richard Middleton demises to Thomas Danyell of Burselem senior, potter, a pasture called Brownehills and another pasture called The Hill in Burslem containing 3 acres, with right to dig claye, "ffillinge upe the pitts after him," for 21 years at a rent of 4s. He demises also to John Leigh 3 acres in Withiemore, with liberty to dig clay in the Withiemore when need be. (*Tunstall Court Rolls.*)

Next year, 1617, William Adams of Burslem describes himself in his Will as "potter"; and among the depositions of witnesses in the Chancery suit of "Mainwaring *v.* Shaw" of 1640, one of the witnesses, Ralph Simpson of Burslem, aged 80,

is described as "potter." Thereafter every reference to Burslem or Tunstall is replete with "potters" or "earth-potters," and men trained to the trade were acquiring the skill necessary for the localization of the coming industry.

The men were ready. The clay and coal are found together cropping out in the country of the Staffordshire Potteries. The clay, though not now used for earthenware, is, and always has been, suitable for the saggars in which the ware is packed while being fired, and for the fire-bricks of the kiln in which the ware is baked. The coals were so cheap that, in 1680, they cost apparently only 16d. a ton at the pit's mouth, and although such coal had to be carried usually on horseback, yet it never had to be carried more than two miles to reach the pot ovens.

One other raw material was wanted—lead. It was the most expensive, almost the only part of the master potter's equipment that required capital. The ore was got at Lawton Park, six miles to the north. The capital stock-in-trade of the early potter is shown by the Will of John Colclough *alias* Rowley, of Burslem, who died in

1656, leaving "to Thomas Wedgwood of the Churchyard of Burslem . . . all my pottinge boards and all other necessary implements and materialls belonginge to the trade of pottinge (lead and lead orre onely excepted)." This same Thomas Wedgwood was great-grandfather of Josiah Wedgwood, and he, as well as two of his brothers, Aaron and Moses, also describe themselves in their Wills as "Potters."

Burslem was by 1670 full of potters; making no doubt butter-pots or the commonest of ware.*

*1671. List of inhabitants of Burslem from the Headborough's presentments in the *Tunstall Court Rolls*.

John Muchell	Wm. Simson	Sam. Cartlech
Thos. Flecher	Joseph Simson	Thos. Marsh
John Royle	Raphe Simson	John Marsh
Raphe Bech	Thos. Cartlech	Thos. Copland
Ric. Edge	Arthur Monsfield	Thos. Armstrong
John Hord	John Roden	Ric. Stonner
Wm. Hord	Wm. Monsfield	Rob. Wood
Moses Wedgwood	Thos. Denyell	Rob. Wood
Moses Wedgwood	Wm. Denyell	Wm. Twomlow
Thos. Lounes	John Clowes	Rob. Simson
Samuel Leigh	Sam. Clowes	Ric. Hand
Fras. Foster	John Denyell	Thos. Cartlech
Wm. Marsh	Joseph Malken	Thos. Addames
John Barlow	Wm. Wedgwood	Raphe Borne
Wm. Hord	John Jones	Jas. Rushen

A little further off, in the valley of Tinkersclough, Thomas Toft was actually attempting decoration. The Toft dishes are well known. They are signed with the name, Thomas Toft or Ralph Toft, written in liquid slip clay upon the plate. They are made of red, buff or yellow clay, and other coloured slip-clays are dribbled over them through a quill, so as to make pictures of Charles II, or Queen Anne, or a pelican picking its breast to feed its young. Then the whole is dusted over with powdered lead ore, and fired till the lead fuses into the plate and forms a rich yellowish glaze.

Some of these productions, of what has come to be called the Toft school, are dated. There is a candlestick, very elaborate, dated 1649, and

Jossua Leigh	John Ward	John Shaw
Izac Ball	John Cartlech	John Sickes
Izac Monsfield	John Lockett	John Tonstall
Raphe Flecher	Jas. Standley	Thos. Gratbache
John Flecher	John Rowley	Ric. Twomlow
Ric. Flecher	Raph Shaw	Wm. Browne
Wm. Steele	Hen. Bourne	Wm. Edge
Wm. Steele	Wm. Harrison	Fras. Rogers
Raphe Steele	Rob. Denell	Ric. Borne
John Simson	Wm. Marsh	John Denyell

claimed for Staffordshire. Shaw mentions two dishes marked, one "Thos. Sans," and the other "Thos. Toft," each dated 1650.* M. Solon had seen a slip dish, in a cottage in Hanley, bearing this inscription scratched on its back, "Thomas Toft, Tinkers Clough, I made it 166-."† A dish with the picture of a soldier bearing a sword in each hand, and inscribed in slip "Ralph Toft, 1677" is also mentioned by M. Solon.‡ Another, marked Ralph Toft, and bearing the image of a very wasp-waisted lady is in the Salford Museum, dated "1676."§

Other makers of this school were Thomas and William Sans, Ralph Simson and William Taylor. They made two-handled drinking mugs called "tygs" with similar decoration; and small model cradles made in clay and slip—presents for young married couples, according to their local custom. Puzzle Jugs were another "freak" production, speaking the humour of the time. The jug was so contrived with multiple spouts and hidden pas-

* Shaw "Staffordshire Potteries," p. 103.

† Solon "Art of the Old English Potters," p. 34.

‡ *ibid.* p. 35.

§ Burton "Hist. and Descrip. English Earthenware," p. 31.

sages as to spill however one tried to drink from it. A sample of these puzzle jugs in stoneware bears the inscription "John Wedgwood 1691."* This man was the eldest son of the Thomas Wedgwood previously mentioned, and did not pot himself. I think this jug was made for him by his nephew, Richard Wedgwood, to whom he both leased the Overhouse Works and married his daughter and heiress. Several pieces are marked with the name "Joseph Glass," who is known to have been a potter in Hanley in 1710-15.

All these early master potters were handy men of many trades. They made their pots in sheds at the "backsides" of their dwelling houses, alongside the cow-shed. They dug their own clay, often in front of their own front doors. The Wedgwoods at least owned and dug their own coal, wherewith to fire the oven. It was a peasant industry, carried on by the family, among the pigs and fowls; and when they were not making show pieces for presentation they made butter-pots, in which farmers might market their butter at Uttoxeter—at least so says Dr Plot.

* Brit. Museum.

CHAPTER II.

A PEASANT INDUSTRY.

DR PLOT seems to have visited the Potteries in 1677. In 1686 he published his "Natural History of Staffordshire." Although he obviously takes the most lively interest in the dances of witches, and that strange chemical process called "striking with galls," yet he was also a keen observer, and found time to set down the earliest account—and at the same time an intelligent account—of the North Staffordshire potting industry. A contemporary account of this early date must obviously be of the greatest importance, and it is here given in full.

"As for tobacco-pipe clays, they are found all over the County... whereof they make pipes at Armitage and Lichfield...also at Darlaston, but of late disused, because of better and cheaper found in Monway field betwixt Wednesbury and Willingsworth, which make excellent pipes. And Charles Rigg, of Newcastle, makes very good

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Slip decorated Staffordshire ware. *c.* 1660. In the Stoke-on-Trent Museums.

pipes of three sorts of clay; a white, and a blew, which he has from between Shelton and Handley Green."

"The most preferable clay of any is that of Amblecot, of a dark blewish color, whereoff they make the best pots for the glass-houses of any in England;...Other potters clays for the more common wares, there are...at Horseley Heath, Tipton and in Monway field . . . of these they make diverse sorts of vessells at Wednesbury, which they paint with slip made of a reddish sort of earth gotten at Tipton.

"But the greatest pottery they have in this County is carried on at Burslem, near Newcastle-under-Lyme, where for making their severall sorts of pots they have as many different sorts of clays, which they dig round about the towne, all within half a miles distance, the best being found nearest the coale; and are distinguished by their colours and uses as followeth:—

1. Bottle clay, of a bright whitish streaked yellow colour.
2. Hard-fire clay of a duller whitish colour, and fuller interspersed with a dark yellow, which

they use for their black wares, being mixed with the

3. Red blending clay, which is of a dirty red colour.
4. White-clay, so called, it seems though of a blewish colour, and used for making a yellow-coloured ware, because yellow is the lightest colour they make any ware of.*

all which they call *throwing clays*, because they are of a closer texture, and will work on the wheel;

"Which none of the three other clays, they call *slips*, will any of them doe, being of looser and more friable natures; these mixed with water they make into a consistence thinner than a syrup, so that being put into a bucket it will run out through a quill; this they call Slip, and is the substance wherewith they paint their wares; whereof the

1-sort is called the Orange slip, which before it is worked, is of a greyish colour mixt with orange balls, and gives the ware when annealed an orange colour.

2. The White slip, this before it is workt, is of a dark blewish colour, yet makes the ware yel-

* This ware turned yellow with the glaze.

low, which being the lightest colour they make any of, they call it (as they did the clay above) the white slip.

3. The Red slip, made of a dirty reddish clay, which gives wares a black colour.

neither of which clays or slips must have any gravel or sand in them; upon this account before it be brought to the wheel they prepare the clay by steeping it in water in a square pit, till it be of a due consistence; then they bring it to their beating board, where with a long spatula they beat it till it be well mixed; then being first made into great squarish rolls, it is brought to the wageing board, where it is slit into flat thin pieces with a wire, and the least stones or gravel pickt out of it; This being done, they wage it, i.e. knead or mould it like bread, and make it into round balls proportionable to their work, and then tis brought to the wheel, and formed as the workman sees good.

"When the potter has wrought the clay either into hollow or flat ware, they are set abroad to dry in fair weather, but by the fire in foule, turning them as they see occasion, which they call whaving: when they are dry they stouk them,

i.e. put ears and handles to such vessels as require them: These also, being dry, they then slip or paint them with their several sorts of slip, according as they design their work,—when the first slip is dry, laying on the others at their leasure, the orange slip making the ground, and the white and red the paint; which two colours they break with a wire brush, much after the manner they do when they marble paper, and then cloud them with a pensil when they are pretty dry. After the vessels are painted they lead them, with that sort of lead ore they call smithum, which is the smallest ore of all, beaten into dust, finely sifted and strewed upon them; which gives them the gloss, but not the colour;* all the colours being chiefly given by the variety of slips, except the motley colour, which is procured by blending the lead with manganese, by the workmen called 'magnus.'† But when they have a mind to show the utmost of their skill in giving their wares a fairer gloss than ordinary,

* The uncoloured lead glaze generally gave a warm yellow tint to the ware.

† The manganese lead glaze darkened the ware to a rich brown. It produced the mottled effect by being dabbed or dusted on in patches.

they lead them then with lead calcined into powder, which they also sift fine and strew upon them as before, which not only gives them a higher gloss, but goes much further too in their work, than lead ore would have done.

"After this is done they are carried to the oven, which is ordinarily above 8 foot high, and about 6 foot wide, of a round copped forme, where they are placed one upon another from the bottom to the top: if they be ordinary wares such as cylindrical butter pots &c. that are not leaded, they are exposed to the naked fire, and so is all their flat ware though it be leaded, haveing only parting-shards, i.e. thin bits of old pots put between them, to keep them from sticking together. But if they be leaded hollow-wares, they do not expose them to the naked fire, but put them in shragers, that is, in coarse metall'd pots, made of marle (not clay) of divers formes, according as their wares require, in which they put commonly three pieces of clay called Bobbs for the ware to stand on, to keep it from sticking to the shragers; as they put them in the shragers to keep them from sticking to one another (which they would certainly otherwise

doe by reason of the leading) and to preserve them from the vehemence of the fire, which else would melt them downe, or at least warp them. In 24 hours an oven of pots will be burnt, then they let the fire goe out by degrees which in 10 hours more will be perfectly done, and then they draw them for sale, which is chiefly to the poor cratemen, who carry them at their backs all over the whole Countrey, to whome they reckon them by the piece, i.e. Quart, in hollow ware, so that 6 pottle, or 3 gallon bottles make a dozen, and so more or less to a dozen, as they are of greater or lesser content; The flat wares are also reckon'd by pieces and dozens, but not (as the hollow) according to their content, but their different bredths."*

* M. Solon explains this method of reckoning as follows: "Art of the Old English Potter," p. 32. "The unit was represented by a dozen small pieces, and that unit served as the basis of reckoning for all the rest. For instance, a dish might have been worth a 'dozen'; a very large dish 'counted 2 dozen'; of bowls, jugs, cups, and other articles of middle sizes it required 2, 3 or 4 to make a dozen. The potter knew at once the value of the contents of his oven by the number or 'dozens' put in; while the workman could easily calculate his wages by the number of 'dozen' he made in the week. . . . . So convenient was this method of reckoning that it is kept up to this day in many manufactories both in England and on the Continent."

Again, in discussing the great dairy produce market at Uttoxeter, at which the Cheesemongers of London had thought it worth while to set up a "factorage," Plot says:—"the factors many mercat days (in the season) lay out no less than £500 a day, in these two commodities [butter and cheese] only. The butter they buy by the pot, of a long cylindrical form, made at Burslem in this County of a certain size, so as not to weigh above 6 lbs. at most, and yet to contain at least 14 lbs. of butter, according to an Act of Parliament made about 14-16 years agoe, for regulating the abuses of this trade in the make of the pots and false packing of the butter."*

Later on, too, he describes how the lead ores are "dug in a yellowish stone, with cawk and spar, on the side of Lawton Park;† where the workmen distinguisht it into three sorts, viz. round ore, small ore, and smithum." He describes how the ores are cleaned; "which done, it is sold to the potters at Burslem for 6 or 7 pounds per tun, who have

*This Act was passed in 1661, which would make the date of Plot's visit to the Potteries 1675-7.

†Lawton Park is on the Cheshire side of Mow Cop, only six miles from Burslem.

occasion for most that is found here for glaseing their pots."

For a contemporary inventory of a nascent industry Plot's account is extraordinarily full and accurate. It is so important and so unique, that no apology need be made for quoting it at length.

The pot-oven described by Plot would be surrounded by a wall of clods of turf to keep in the heat, or by a "hovel" with walls of broken saggars, roofed with boughs and clods of earth. Each pot-works consisted of a hovel such as this, some thatched open sheds for drying the ware, and an open tank or sun-pan in which the clay mixed with water was evaporated. These sun-pans or sun-kilns were 12 to 20 feet long and wide and about 18 inches deep. One portion partitioned off, and deeper and lined with flag-stones, was used for mixing. Here the clay was "blunged" by a man with a long pole or paddle, and thoroughly mixed with the water. The mixture was then poured through a sieve from the blunging vat into the sun-pan.

A pot-works of almost exactly this description is to be seen to-day at Garshall Green near Stone,

for making flower pots; even here, however, a pugmill has taken the place of the blunging pole.

It was a very raw industry in 1677. What led to the artistic development of pottery in England as a whole was the trading contact with the advancing civilization of Holland and Germany. The English were learning all through the reigns of Elizabeth and the Stuarts to adapt pottery to drinking and eating purposes; and the London and Bristol potters were learning to copy the tin-enamelled dishes from Delft, and the stoneware drinking mugs from the Rhine. The ideas which Holland and Germany had passed on to London, found their way at last to North Staffordshire. In that narrow area were to be found the requisites needed for a manufacture;—the clays to make, the coals to fire, the men with experience. All that was still needed was the artist and experimental chemist. It might even be said that the artists were already there and in a sense they were.

Probably the commonest production of the North Staffordshire Potteries in 1677, after the redoubtable butter-pots, was the marbled ware that Plot mentions. This method of decoration

consists of laying on lines or splashes of the different coloured slips, and then combing or sponging them together. This marbled ware remained popular for a hundred years, and was the legitimate precursor of the solid agate wares of Whieldon and Wedgwood.

A later historian, Simeon Shaw, writing in 1828, tells us on the authority of tradition that, besides makers of the butter-pots, and the mottled and marbled ware, and the slip-decorated ware, there was in 1685 a potter, Thomas Miles of Shelton, who was even then making from a local clay, mixed with white sand from Baddeley Edge, something which he calls "stone-ware."* Certain it is, as will be shown later, that Aaron Wedgwood and his sons Thomas and Richard and also Matthew Garner were making brown stoneware and red teapots in Burslem in 1693. Stoneware, as we understand it, is so hard and dense that it requires no glaze to make it impervious to water, because it can be fired at such a high temperature as to partially fuse the body of the ware. This stoneware, afterwards glazed with salt, was to be the

* S. Shaw "Hist. Staffs. Potteries." p. 109.

most distinctive product of North Staffordshire.

These peasant potters "fired" and "drew out" one oven a week. They drew the cold oven on Monday; refilled it with new ware about Thursday, and fired it on Friday, giving it a last stoking up on Saturday morning, after which it cooled till Monday again. The ordinary ware was at this time only fired once, and only fired to a moderate temperature, just sufficient to melt the dusted lead ore and fuse it into a glaze on the surface of the ware, thus making it impervious to water. Though the native potters were even then trying to improve their craft from the German or Dutch potters employed in London, yet, as M. Solon has shown, they owed very little to the science or knowledge of the world, even the limited knowledge of that period. The colouring properties of Copper Oxide were known and employed throughout England at this period, yet there is no trace on the wares of the North Staffordshire potters till the eighteenth century is well advanced of the distinctive blue given by this invaluable colouring material.

The ware produced was sold to the travelling packmen, and, at great cost, distributed on horseback throughout the country. Everything was coarse and elementary. There were no turning lathes to give neatness to the thrown article; there was no white body or ground upon which to enamel colours; there were no moulds for any but the smallest ornamental "spriggs"; no enamel paints; and there was practically no means of getting to a market.

Such was the state of the Staffordshire potting trade in the year 1693, when those mysterious foreigners, John Philip Elers and David Elers, appeared upon the scene, like Cortez among the Mexicans, and broke up for ever the placid uneventful course of the old peasant industry.

CHAPTER III.

ELERS AND ART.

THE brothers Elers are supposed to have come from Amsterdam in the train of the Prince of Orange. Jewitt has studied their pedigree and says they were originally of a noble family of Saxony—their father an ambassador, their grandfather an admiral! However that may be, the first notice we have of them is in a note in the Philosophical Transactions of 1693 by Dr Martin Lister. He says: "I have this to add, that this clay Haematites, is as good, if not better, than that which is brought from the East Indies. Witness the teapots now to be sold at the potters in the Poultry in Cheapside, which not only for art, but for beautiful colour too, are far beyond any we have from China; these are made from the English Haematites in Staffordshire, as I take it, by two Dutchmen incomparable artists."* We too may call them incomparable artists if we compare

* "Philosophical Transactions," vol. xvii, 1693, p. 699.

this evidence with Plot's account of fifteen years before, or their teapots sold at a guinea a time,* with the almost barbaric puzzle-jars of the native potter.

It has hitherto been assumed from this statement of Dr Lister's that the Elers were *in* Staffordshire in 1693. It does not follow from the extract that the teapots were made in Staffordshire, only that the clay came from thence. In the same year, 1693, they were sued by Dwight of Fulham for copying his red teapots, and in the suit they are described as "of Fulham." Moreover Dr Martin Lister, writing again in 1698 in his "Account of a Journey to Paris in the Year 1698," says, after speaking of the porcelain made at St Cloud, "As for the red ware of China, that has been and is done in England.... But we are in this particular beholden to two Dutchmen who wrought in Staffordshire, as I have been told, and were not long since in Hammersmith."† This, it will be seen, confirms the supposition that they first made their teapots and stoneware in Fulham or Hammersmith.

* Burton's "English Earthenware," p. 77. † Burton *op. cit.* 76.

The important Chancery Suit, discovered by Prof. Church, in which Dwight sued his copyists at Fulham, Nottingham and Burslem is as follows:

June 20, 1693. The complaint of John Dwight of Fulham in the County of Middlesex, gentleman, showing that the complainant having . . . invented and set up at Fulham several new manufactures of earthenwares called White Gorges, marbled porcelaine vessells, statues and figures and fine stone gorges and vessells never before made in England or elsewhere, and alsoe discovered the mystery of opacous red and dark coloured porcelaine and china . . . obtained lettres patent dated June 12, 1684 . . . he and his servants have for several years past used . . . said invention . . . and sold them. . . . But having formerly hired one John Chandler of Fulham . . . and employed him in the making . . . thereupon John Elers and David Elers, both of Fulham (who are forreigners and by trade silversmiths) together with James Morley of Nottingham and also Aaron Wedgwood Thomas Wedgwood and Richard Wedgwood of Berslem in the County of Stafford and Matthew Garner . . . did insinuate themselves into the acquaintance of the

said John Chandler and . . . inticed him to instruct them . . . and to desert the complainant's service to enter into partnership together with them to make and sell the said wares . . . but far inferior to them. . . . And the said confederates, "the better to colour their said unjust and injurious practises," pretend that the earthenwares made and sold by them are in no way like those invented by the complainant but differ from them in form and figure and have several additions and improvements . . . whereas the truth is they are made in imitation of the complainants wares . . . prays that writs of *subpena* be directed to John Chandler, John Elers, David Elers, Aaron Wedgwood, Thomas Wedgwood, Richard Wedgwood and Matthew Garner and James Morley.

The answer, dated June 8, 1694, of the man with the Staffordshire name of Garner to this Bill of Complaint, shows that he was apprenticed about 1680 for eight years to one Thomas Harper of Southwark, potmaker, and he says that, afterwards, he invented a way of making earthen brown pans and mugs, which art he still practises. The answer of David Elers to the same Bill, dated

July 28, 1693, states that he learnt at Cologne the manufacture of "earthenware commonly called Cologne or Stone wares," and that about three years ago he and his brother began to make brown mugs and red teapots "within this kingdom of England," and employed John Chandler. He says that neither he nor his brother nor Morley nor any of the other defendants knew John Chandler while he was in the employ of Dwight. He denies that James Morley was ever a partner with him or his brother, or that Chandler was more than a hired labourer. He complains that he and his brother ought not to be deprived of their living.

An order was made on August 10, 1693, for a trial of the action against Morley and the Elers for the making of a brown mug and two red teapots in imitation of china. Before the trial came on in November the Elers came to terms with Dwight, and Morley put off his case by claiming that he only made brown mugs and not the red teapots. On December 15, 1693, the three Wedgwoods were ordered to be added to the Bill as defendants, and on May 5, 1694, Matthew Garner was added also. On May 19, 1694, the Wedg-

woods "for delay have craved a *dedimus* to answer in the country," and yet in the meantime proceed to make and vend the several wares, against which continuance the plaintiff Dwight obtained an injunction "until they shall directly answer to the complaint and the Court shall make other order to the contrary against them their workmen servants and agents." On June 21, 1694, a similar injunction was obtained against Matthew Garner; and on July 26, 1695, against Morley. Garner in his turn wanted his witnesses examined in the country, and the cases against him and Morley and one Luke Talbott dragged on till July, 1696, though nothing more is to be found of the suit against the Wedgwoods. Probably they too compromised on the basis of each paying their own costs, for the last notice there is of these suits is one dated July 1, 1696, which shows Dwight suing his solicitor for excessive costs.

This suit, given by Professor Church in the "Burlington Magazine" (February, 1908) upsets a good many preconceptions, and throws considerable light on the stage at which the development of the potting craft had arrived in 1693. In the

To face p. 32

Earliest known piece of Staffordshire salt glaze ware, 1701. From the Stoke-on-Trent Museums.

first place Garner, a Staffordshire lad to judge from his name, is apprenticed to a London potter. This shows communication between London and Staffordshire, and a clear desire to improve a potting trade in Staffordshire by contact with more civilized methods. Then the injunction obtained against Aaron Wedgwood and his sons, "Doctor" Thomas and Richard "of the Overhouse," shows that they were making in 1693 the red teapots, known to collectors as Elers and Dwight, and the brown stoneware which, glazed with salt, was later the characteristic work of Dr Thomas Wedgwood. We must, therefore, call these Wedgwoods and Matthew Garner the first known Staffordshire makers of stoneware, and as Garner was out of his apprenticeship in 1688, and Elers started in Fulham in 1690, we can give the date 1690 as the starting point of the stoneware glazed with salt in Staffordshire.

If there was a definite partnership between the Elers and the Wedgwoods I expect it was confined to the supply of red Staffordshire clay to the factory at Fulham. It may well be that, as a result of this very action, the Elers determined to shift their

workshops and put them up in the place whence hitherto they had got their clay, and where the unfortunate leakage that had perhaps betrayed Dwight's secrets could, in their case, be more easily prevented. Be the cause what it may, between 1693 and 1698 John Philip Elers, the elder brother, was established in a secluded farm in Bradwell Wood under Red Street. It should be noticed that at this time, and for half a century afterwards, Red Street was important as a potting village. Messrs Mayer & Moss of Red Street were, about 1740, among the most considerable potters of their day.

Here, at Bradwell, the Elers put up their workshops and small kiln, while they lived at another old house, Dimsdale Hall, which is still standing about a mile to the south. Shaw* had a legend about an elaborate underground speaking-tube, fixed from Bradwell to Dimsdale, through which notice might be given to the works of the approach of strangers. And it is a curious tribute to the value of such legends that, within the last few years, white earthenware voice-pipes have actually been

*S. Shaw "Staffordshire Potteries," p. 119.

dug up on the site of the Bradwell factory. They did not, of course, really extend from Bradwell to Dimsdale, but they went from one part of the factory to another, and were probably devised to secure secrecy rather than modern economy. These pipes are now to be seen in the Hanley Museum, and the curious thing is that one of them is glazed with salt. This, besides confirming the legend of the voice-pipes, is the only certain living witness that the Elers used salt glaze.

We have spoken of the two brothers going to Staffordshire, but the recently accepted view is that John Philip Elers alone worked at Bradwell, while David remained in London at the shop in the Poultry, where he sold his brother's teapots at from 12s. to 24s. apiece.*

The first pottery ware made at Bradwell was the same as Dwight's "red porcelaine." On the land at Bradwell Farm was the seam of red clay which formed the foundation of the ware, giving when fired a dense hard red stoneware of fine texture.† There are in the South Kensington Museum two

* S. Shaw, *op. cit.*, p. 118.

†Burton, "English Earthenware," p. 74.

pieces of "red porcelain" credited by Burton to Elers and illustrated in his book. They are in marked contrast to the slip decorated and marbled Staffordshire ware of the same time. They have been turned in the lathe after throwing, and thus made thin and light. The clay body is homogeneous and smooth, showing greater care in the preparation of the body. The ornamentation is delicate and artistic, and has been made by sealing a soft piece of the clay on to the ware with a metal seal pressed over the soft clay. There is no glaze, but a high fire has produced a ware so hard as to be almost forged solid. These things show the hand of the ex-silversmith in size and shape and finish. The Burslem imitators—Garner and the Wedgwoods—never made things like these. Elers, though he may have stolen Dwight's secrets, went ahead and showed the possibilities of potting. He is said also to have produced black ware of a similar character by mixing oxide of manganese—the "magnus" of Dr Plot—with the clay body, and, though no known pieces of black Elers ware can now be certainly identified,

1. Red china teapot, probably by Elers. *c.* 1700.
2. Sample of later date, with moulded spout. Stoke-on-Trent Museums.

Samples of solid agate ware made by Wedgwood or Whieldon. *c.* 1760.
From the Stoke-on-Trent Museums (see p. 74).

it is this black ware that his copyists chiefly developed.*

For Nemesis overtook John Philip Elers, and in spite of all his secrecy, perhaps because of it, he was copied. Two potters, Twyford and Astbury,† one of whom at least had already made pots after local methods in Shelton, set themselves independently to acquire the arts of the Dutchman. To lull the suspicions of Elers, Twyford shammed stupidity, and Astbury, who was younger, passed himself off as an idiot. Recommended by these strange qualifications, they asked and obtained employment and, in time, the knowledge they desired. They went back to Shelton with their acquired arts, and, in a few years, the most intelligent potters of North Staffordshire knew how to make civilized pottery. But by 1710 John Philip Elers was tired of his exile and of the

*Burton, "English Earthenware," p. 74.

† A list of those who joined the "Association to defend and avenge King William" in 1696 is preserved at the Record Office. Among 100 names given in Stoke-on-Trent, which included Hanley, Shelton, Longton, &c., occur side by side the names of Joshua Twiford and Robert Astbry. Is it possible that even then they had their pot-banks side by side, as tradition says, on the knoll where Shelton Church now stands?

treatment he had received. The true porcelain which should detect poison was still unattained, and his "red porcelain" and his black ware were become by somewhat sharp practice a staple product of the district. So he shook off the clay of Staffordshire from his feet and rejoined his brother in London.

Years later Josiah Wedgwood, who had every reason to know the history of the potteries from hearsay, legend and family tradition, gave an account to his partner Bentley of what John Philip Elers had done. The son, Paul Elers, had asked Wedgwood to make a medallion of his father's head, surrounded by the motto: "Plasticis Britannicae Inventor." Josiah Wedgwood—looking back on the long array of his ancestors, all potters born and bred in Burslem before ever Elers put his hand to the thrower's wheel—says the motto "conveys a falsehood," and that John Philip Elers merely *improved* the Art. "The reason," he writes in 1777, "for Mr Elers fixing upon Staffordshire to try his experiments, seems to be that the Pottery was carried on there in a much larger way, and in a more improved state, than in any other

part of Great Britain." "The improvements Mr Elers made in our manufactory were precisely these. Glazing our common clays with salt, which produced Pot d'Grey or Stone Ware . . . I make no doubt but glazing with salt, by casting it among the ware while it is red hot, came to us from Germany, but whether Mr Elers was the person to whom we are indebted for the improvement I do not know. . . . The next improvement introduced by Mr Elers was the refining our common red clay by sifting, and make it into Tea and Coffee ware in imitation of the Chinese red Porcelain, by casting it in plaster moulds, and turning it upon the outside upon lathes, and ornamenting it with the tea-branch in relief."*

It is impossible to say why Wedgwood attributed "casting in plaster moulds" to Elers, for all the evidence goes to show that the process known technically as "casting" only came in with the introduction of alabaster "blocks" and pitcher moulds after 1730. As to the far more important and debatable point—the introduction of the process of glazing with salt—this evidence of

* Wedgwood's Letters II, 367-70.

Wedgwood's is perhaps the most reliable that we can get.

As the invention of salt glazing not only made, at one stroke, a new manufacture possible, but one that was peculiar to North Staffordshire, it may be as well to examine more closely the evidence as to its discoverer and its discovery.

The idea that salt glazing was accidentally discovered at Bagnal by some strong brine solution boiling away in an earthen pot which became automatically glazed* may be dismissed at once for the simple reason that it could not happen as described. It may be urged too in Elers' favour that, long before this, salt glazing was practised in Germany. Again, Aikin in his "History of Manchester," written in 1794, gives an elaborate account of the novelty as practised by Elers. He writes: "It was in the memory of some old persons with whom a friend of ours was well acquainted that the inhabitants of Burslem flocked with astonishment to see the immense volumes of smoke which arose from the Dutchmen's ovens on casting in the salt; a circumstance which sufficiently shows

* Shaw, *op. cit.*, pp. 108-9.

the novelty of this practice in Staffordshire Potteries."* Probably this part of Dr Aikin's work was written by Alex. Chisholm, secretary to Josiah Wedgwood.

At least the same story was told to Josiah Wedgwood in 1765 by an old workman named Steel, aged 84, who could remember the Dutchmen at work at Bradwell, and who joined those who ran to the place amazed at this unusual mode of firing. No doubt this is what was in Wedgwood's mind when he wrote to Bentley in 1777, as quoted above.

On the other hand we have the evidence of Simeon Shaw,† first that William Adams and Thomas Miles produced salt glaze in 1680 (a very doubtful supposition in view of the Chancery suit recently discovered), and then that "Mr. John Mountford, 27 years since (i.e. in 1801), took down the remains of the (Elers') oven, and he states that the height was about 7 feet, but not like the salt-glaze ovens." And again: "E. Wood and J. Riley both separately measured the inside diameter of the remains, at about 5 feet; while other

* Aikin, "Manchester," 526. † Shaw, *op cit*, p. 121.

ovens, of the same date, in Burslem, were 10 or 12 feet. The oven itself had 5 mouths, but neither holes over the inside flues nor bags, to receive the salt, had any been used by them." "The foundations," he adds, "were very distinctly to be seen in 1808, though now covered by an enlargement of the barn."

Also there is the fact that no salt glaze ware that could be conclusively shown to be Elers' has ever been excavated on the site of his factory, except the white voice-pipes previously mentioned.

Taking everything into consideration—the impossibility of saying definitely who the makers of early pieces of salt glaze were; the possibility of Elers having made his salt-glaze in a different oven and on a different site to that seen and excavated; the fact that in 1710-1715 Staffordshire potters were making stoneware, and that Plot does not mention it in 1677—none but Garner and the Wedgwoods were sued for making even stoneware in 1693—we may assume that the Elers did, in actual fact, introduce the salt glaze into North Staffordshire.

The red and black bodies made by Elers are

still in fashion, but even more valuable than the doubtful invention of the particular ware was his careful method of refining and mixing the clay body, and the exact turning of the pieces to extreme thinness and precision of outline. On the excellence of his work, rather than on inventions which were not really new, his fame deserves to rest. He may not, for example, have been the first to introduce the method of sealing on the clay ornaments, but the ornaments themselves were for the first time in really good taste. It was this refined taste and precision of execution—and the proof that it paid financially—which taught the Staffordshire potters the most valuable lesson.

Thus it was that, when Queen Anne and tea drinking came in, North Staffordshire had not only the clay and the coal, but also the tradesmen to make the ware required.

CHAPTER IV.

THE SALT-GLAZE POTTERS.

THE successors of Elers—Robert Astbury, Joshua Twyford, and especially Dr Thomas Wedgwood—built up the reputation of the salt-glazed stoneware, which for fifty years was the glory of North Staffordshire; and, in the improvements they effected, the first two atoned for anything that to the modern mind was irregular in the manner by which they got their start.

It was to Dr Thomas Wedgwood (1655-1717), and his son Thomas (1695-1737), who made stoneware at "Ruffleys" in Burslem, that local tradition ascribes most of the improvements in salt-glazed wares. Mr Burton writes of the younger Dr Thomas: "It has never been suggested that Dr Thomas Wedgwood, like Twyford or Astbury, learned anything directly from Elers, but as he was a man of intelligence and commercial aptitude, as well as one of the best practical potters of the day,

he would naturally adopt such new ideas as were brought in his way. Judging by the fragments of drab salt-glazed stonewares that have been found on the site of his old works in the centre of the town of Burslem, collectors are in the habit of attributing to him, with some show of justice, the finest pieces of this type."*†

The secret of the salt-glaze process consists in firing the ware, specially composed of clay mixed with some siliceous sand or flint, to a temperature higher than ordinary earthenware will stand, and then, when red hot, shovelling common salt on to it through the top of the furnace. The salt fumes, passing through large holes in the saggars, cover the ware with a fine coat of colourless soda glaze. This glaze can always be distinguished from lead glazes by its peculiar pock-marked roughness, which indeed makes it somewhat unsuitable for plates or dishes for ordinary use; and, although for fifty years salt glaze did more than hold its own in public estimation, improvements in the old earthenware finally drove it out. By the end of the

* Burton, *op. cit.*, p. 86.

† See page 87 for the relationship of the various potters of the Wedgwood family.

eighteenth century salt glazing had ceased to be practised.

Without Astbury,* who is said to have died in 1743, aged 65,† it is doubtful whether even salt glazing could have been a really great success. He it was that obtained a body white enough to show off the transparent salt glaze to the best advantage. Dr Thomas Wedgwood had only the drab body to work on—a far less effective medium.

With the object of whitening the clay body, Astbury began to import the white clays of Devonshire.‡ At first he used them only as a wash or dip to whiten the surface of the ware, just as the tin-enamel had been used to conceal and coat the coarse body of the Delft ware. Then he developed the use of the white sands of Baddeley Edge and Mow Cop to harden the body; and, in 1720, according to tradition, he made the really vital discovery of the value of calcined flint stones for both these purposes—to whiten and to harden the clay body from which the stone ware was

* The Christian name of the first Astbury was probably Robert, but see *Dict. Nat. Biog.* under Astbury.

† Shaw, *op. cit.*, p. 130.

‡ Shaw, *op. cit.*, p. 126.

made. Josiah Wedgwood, writing in 1777, attributed this discovery to a potter of Shelton called Heath instead of to Astbury,* but whoever it was that first noticed the whiteness of burnt flints, it was Astbury who first determined the value of the new material and the manner of using it. This discovery marks the first stage in the production of cream-coloured earthenware as well as in the production of the perfect salt glaze.†

Astbury and his son Thomas made red and black ware also, after the pattern of Elers, but with this difference, the ornamentation of Astbury's red or black ware is generally done in white clay,‡ instead of in the same colour as the body; and this

* "Wedgwood's Letters, II," p. 368.

† The incident referred to, which Shaw says occurred to Astbury, and Wedgwood to Heath, was as follows:—One of them was on a business journey to London, then naturally taken on horseback; before reaching Dunstable or Banbury, his horse's eyes became inflamed. The ostler of the Inn put a piece of flint into the fire; when it was red-hot he quenched it with water and pounded it to a fine powder, a little of which was blown into the horse's eye, relieving the inflammation. The potter, noticing the extreme whiteness of the calcined flint, and also the ease with which it was powdered, was led to try this material to improve the whiteness of his ware, and with the most successful results.

‡ Shaw, *op. cit.*, p. 141.

is one sign by which collectors distinguish these two makers. Robert (or John) Astbury was succeeded by his son Thomas, who had started potting at Lane Delf in 1725. Their name does not occur among the potters of the latter half of the eighteenth century, but Margaret, Thomas Astbury's daughter, married Robert Garner, a master potter of Longton, who attained a considerable position.

Joshua Twyford (1640-1729), like Astbury, had his factory in Shelton; one stood on either side of the mound where the church now is. Twyford is best known for his stoneware, chiefly red and black in the style of Elers, but he is also supposed to have made salt-glazed ware.

A particularly full account of the potters of 1710-15, especially of those in Burslem, is preserved in a document drawn up by Josiah Wedgwood in 1765. He gives both the weekly cost-account of a typical pot factory of this period; and also a list of the potters' names and the kind of ware they produced. The document is in his own handwriting, and it appears from a letter of Wedgwood's to Lord Auckland in 1792 that he obtained the information given in this document by "having

examined some of the oldest men in the pottery here, near thirty years ago, who knew personally the masters in the pottery, and very nearly the value of the goods they got up, fifty years before that." . . . "From these data," he goes on to say, "I can pretty nearly ascertain the annual value of the goods made here at that time; which was something under £10,000 a year."* He then proceeds to guess at the annual value of the trade in 1792, which he says may be between £200,000 and £300,000. I cannot help thinking that his estimate was purposely on the low side, for the manufacturers of this date always lived in fear of special taxation. In 1821 the export trade alone was worth £423,399 a year,† and in 1822 £489,732.

The document runs as follows:

"Men necessary to make an oven of Black and Mottled, per week, and other expences—

	£	s.	d.
6 men, 3 at 4s. a week, and 3 at 6s.	1	10	0
4 boys at 1s. 3d.		5	0
1 cwt. 2 qrs. Lead Ore, at 8s.		12	0
Manganese		3	0

*"Wedgwood Letters," III, p. 190.

†"Monthly Magazine," November 1823.

Clay, 2 cart-loads, at 2s.	4	0
Coals, 48 horse-loads, at 2d.	8	0
Carriage of do., at 1½d.	6	0
Rent of Works, at £5 per ann.	2	0
Wear and Tear of Ovens, Utensils, &c., at £10 p. a.	4	0
Straw for packing, 3 thrave at 24 sheaves to the thrave, at 4d.	1	0
The master's profit, besides 6s. for his labor	10	0
	£4	5	0

"N.B.—The wear and tear, master's profits, and some other things are rated too high. £4 per oven-full is thought to be sufficient, or more than sufficient, for the black and mottled works of the largest kind, upon an average, as the above work was a large one for those times."

"POT-WORKS IN BURSLEM ABOUT THE YEAR 1710 TO 1715."

Potters' Names	*Kinds of Ware*	*Supposed amount*			*Residence*
		£	s.	d.	
Thos. Wedgwood	Black & Motled	4	0	0	Churchyard.
John Cartlich	Moulded	3	0	0	Flash.
("Small") Robt. Daniel	Black & Motled	2	0	0	Holehouse.
("Small") Thos. Malkin	Black & Motled	3	0	0	Hamel.
Richd. Malkin	Black & Motled	2	10	0	Knole.
Dr Thos. Wedgwood	Brown Stone	6	0	0	Ruffleys.
Wm. Simpson	?	3	0	0	Stocks.
Isa Wood	?	4	0	0	Back of the "George."
Thos. Taylor	Moulded	3	0	0	Now Mrs Wedgwoods
Wm. Harrison	Motled	3	0	0	Bournes Bank

THE SALT-GLAZE POTTERS

Potters' Names	*Kinds of Ware*	*Supposed amount*	*Residence*
Isaac Wood	Cloudy	£3 0 0	Tap of Robins Croft.
John Adams*	Black & Motled	2 10 0	Brick House.
Marsh's	Not worked	—	Top of Daniels Croft.
Moses Marsh	Stone Ware	6 0 0	Middle of the Town.
Robt. Adams	Motled & Black	2 10 0	Next on the east side.
Aaron Shaw	Stone & dippt white	6 0 0	Next on the east side.
("Conick") Saml. Cartlich	Motled	3 0 0	Next to the South.
Aaron Wedgwood	Motled & Black	4 0 0	Next to the "Red Lyon."
Thomas Taylor	Stone ware and Freckled	?	Next to the North.
Moses Shaw	Stone ware and Freckled	6 0 0	Middle of the Town.
Thos. Wedgwood	Moulded	2 10 0	Middle of the Town, now Grahams.
Isaac Ball	?	4 0 0	S.W. end of the Town.
Saml. Edge	Stone Ware	6 0 0	Next to the West.
Thos. Lockett	Motled	3 0 0	Late Cartlichs.
Tunstals ("Double Rabbit")	Not worked	3 0 0	Opposite.
John Simpson	?	3 0 0	West end of the Town.
Rd. Simpson	Red Dishes, &c.	3 0 0	The Pump, West End.
Thos. Cartwright	Butter Pots	2 0 0	West end of the Town.
Thos. Mitchel	Not worked	?	Rotten Row (now High Street).
Moses Steel	Cloudy	3 0 0	Rotten Row (now High Street).
John Simpson, Chell	Motld & Black	4 0 0	Rotten Row (now High Street).
J. Simpson, Castle	Red dishes & pans	3 10 0	Rotten Row (now High Street).
Isaac Malkin	Motled & Black	3 0 0	Green Head.
Rd. Wedgwood	Stone ware	6 0 0	Middle of the Town.
John Wedgwood	Not worked	?	Upper House.

*A family of Adams lived and potted at the Brick House in Burslem for over 200 years. In 1762 Josiah Wedgwood rented the Brick House works for seven years during the minority of the then Adams of Brick House. The family became extinct early in the nineteenth century.

Potters' Names	*Kinds of Ware*	*Supposed amount*	*Residence*
Jno. or Joseph Warburton	?	£6 0 0	Hot lane or Cobridge.
Hugh Mare	Motled	3 0 0	Hot lane or Cobridge.
Robt. Bucknal	Motled	4 0 0	Hot lane or Cobridge.
Ra. Daniel	?	3 0 0	Hot lane or Cobridge.
Bagnal	Butter Pots	2 0 0	Grange (i.e. Rushton Grange).
Jno. Stevenson	Cloweded (*sic.*)	3 0 0	Sneyd Green.
? ?	Clouded	3 0 0	Sneyd Green.
H. Beech	Butter Pots	2 0 0	Holdin.
		£139 10 0	at 46 weeks to the year, is £6,417.

"(£6417) annual produce of the pottery in the beginning of the eighteenth century in Burslem parish. Burslem was at this time so much the principle part of the pottery that there were very few pot works anywhere else.

"Potters at Hanley, the beginning of the 18th centy.

Joseph Glass	Clowdy a sort of dishes painted with difft' color'd slips, and sold at 3s. and 3s. 6d. a doz.
Wm. Simpson	Clowdy and Motled.
Hugh Mare [Mayer]	Black and Motled.
John Mare	" " "
Rd. Marsh	Motled and Black. Lamprey Pots and Venison Pots.
John Ellis	Butter Pots &c.
Moses Sandford	Milk Pans and Small Ware.

"Only one horse and one mule kept at Hanley. No carts scarcely in the country. Coals carried upon men's backs. Hanley Green like Wolstanton marsh. Only two houses (meaning potteries) at Stoke; Wards, and Poulsonson's."*

If this list is to be regarded as satisfactory evidence, and it must be remembered that it only professes to be a report of the fifty-year-old recollections of old men, then it would appear that Burslem was still the narrow home of the Potteries. It shows us the master potter of that day, employing 11 hands at wages not exceeding 6s. a week, working himself, and out of his single oven-full a week making a profit of 10s. As represented it is still a peasant industry. But the scope and range of the pottery produced has increased since Dr Plot described "the greatest pottery they have in this County." The butter-pots; the cloudy, mottled, speckled and black; probably the red dishes and pans; these all existed in Plot's time; but what is the "moulded" ware made by Cartlich and Thomas Taylor and by Dr Thomas Wedgwood, jun., in the middle of Burslem? The stone

*Wedgwood MSS.

ware too is new since Plot's time. The five biggest factories all make this stoneware, Dr Thomas Wedgwood, sen., Moses Marsh, Aaron Shaw, Moses Shaw, Sam. Edge and Richard Wedgwood, the brother of Dr Thomas.

Undoubtedly this was the new salt-glazed stoneware. The brown stoneware ascribed in the list to Dr Thomas Wedgwood coincides exactly with the drab salt-glazed teapoy by him now in the South Kensington Museum. It is supposed to have been made by mixing the lightest burning local clay with the fine white sand from Baddeley Edge or Mow Cop.*

The list gives no potworks at all at the Longton end of the district, yet then or shortly afterwards Delft ware was probably made at the place called Lane Delf, now part of Fenton. Shaw says that in 1710 Thomas Heath of Lane Delf was making a strange kind of pottery, and he proceeds to describe a particular dish in such a way as to show that it was really Delft ware.† There is no trace of Delft ware having been made anywhere

* Burton, *op. cit.*, p. 86.
† Shaw, *op. cit.*, p. 126.

Salt glaze teapot, drab body, supposed to be by Thomas Wedgwood, died 1737. From the Stoke-on-Trent Museums.

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else in the Potteries, or indeed at any subsequent time at Lane Delf itself, so that we may fairly ascribe to this solitary experiment of Thomas Heath's the name of the locality.*

At this Longton end, soon after 1710, there was also made white ware of a greenish type, called Crouch Ware. It was made from clay found in Derbyshire that bore this name, and survived as a fairly white ware till Astbury drove it out with his whiter body. In 1725 Thomas Astbury, the younger, set up his new factory in Fenton, and from this date we may say that the whole of the present Pottery area was engaged in the production of Earthenware.†

In fact all that was wanted to convert the peasant pottery of North Staffordshire into a great business was the stimulus given by the refined hand of Elers, and the new demand in the new clubs and coffee houses. When once improvements in manufacture began, invention followed invention; and though the records during the second quarter of

* But there are several places called Delf or Delves in Staffordshire, and they took their name from spots where men delved or dug turf for peat.

† Burton, *op. cit.*, p. 83.

the eighteenth century are full of entries of patents, registered for the performance of every possible and impossible pottery process, yet most of the improvements—especially the vital changes in body and glaze made by Astbury and Booth—became public property unchecked by patent law.

First there was Astbury's new white body, made with a fixed mixture of powdered flint and Devon clay, imported on horseback from the seaport of Chester. Twenty years earlier the idea of bringing clay from Devon would have been regarded as madness, and, even in 1720, carts could not get to Burslem, and the clay must have been brought inland on pack saddles. But the invention of the calcined flint body meant also the invention of that terrible disease known as "potter's asthma" or "potter's rot," which used to cause an even greater mortality than lead poisoning. When white flints were first used they were ground and powdered in the dry state, in an atmosphere of flint dust, in underground cellars, so that the secret of this valuable new preparation should not leak out.* This state of things was soon partially remedied,

* Aikin "Manchester," p. 527.

for between 1726 and 1732 several patents were taken out—by Gallimore, Bourne, and finally by Benson—for grinding the flint stones in water.* Benson's final process has survived to this day as the universal form of flint mill. A vertical shaft with four radiating arms revolves in a circular horizontal pan. The pan, with a hard stone bottom of chert, is filled with water, and similar chert blocks, pushed round by the arms, grind the flints down to a cream. Flint grinding became an industry, and in the well-watered valleys of North Staffordshire, wherever there was both water-power and flint, these flint mills sprung up and flourished. Though most of them are now closed down through the progress of railways and steam, there are some still to be seen working in the Moddershall valley, whence the creamy slip is sent in by water-cart to Longton.

About this same time a workman named Alsager perfected the potter's throwing wheel as we know it at this day. †And now that potters were using these mixed ingredients, Devon clay, ground flint syrup, and native clay in special and patented

* Shaw, *op. cit.*, p. 145. † Aikin *op. cit.*, p. 528.

proportions, the old method of evaporating the slip under the sun in an open pan had to go. It is said to have been Ralph Shaw, a most litigious personage, who began specially to mix clays in a liquid form in a fire-heated trough—locked, of course, that no neighbour might discover the "mystery."* This same Ralph Shaw, of Burslem, took out a patent in 1732, professing—as was almost common form in those days—to make earthenware like Chinese Porcelain. It was to be white within, and white when required without. It was made in reality by dipping the ordinary ware in a white clay dip—just the process Astbury had invented some twenty years before. But there was this that was new to North Staffordshire; Shaw scratched away the white dip on the outside of the jug so that the blue ground became visible. He produced indeed what the mediæval Italians called "graffiato" ware, and very beautiful much of it is.†

Shaw, however, tried to prevent anybody using the white slip at all, and became such a nuisance to his neighbours that they united in 1736 to take

* Burton, *op. cit.*, p. 89. † Burton, *op. cit.*, p. 88.

up the case of John Mitchell, of Burslem Hill Top, who was prosecuted by Shaw for infringing his patent.* Great was the rejoicing in the Potteries when the Judge at Stafford declared, or is reported to have declared:—"Gooa whomm, potters, an' mak what soourts o' pots yoa leykin." "An," says our narrator, "when they coom 'nto' Boslum, aw th' bells i' Hoositon (Wolstanton), and Stoke, and th' tahin, wurn ringin' loike hey go' mad, aw th' dey." Ralph Shaw is said to have been so disgusted at the result that he emigrated to Paris, where he made pots for many years.†

Ralph Shaw's ware was known as "bit-stone ware." The "bit-stones" were put between two pieces of ware when they were fired in the saggars in order to keep them from sticking to each other. They were the more necessary in that Shaw's ware was dipped in a light slip. The "bit-stones" have long since been replaced by "spurs" and "stilts" and other small earthenware objects, the special manufacture of which is now a great industry by itself. The single stilt and spur factory of Thos.

* Shaw, *op. cit.*, p. 147.

† Ward, "Stoke-on-Trent," p. 227.

Arrowsmith in Burslem employs now 230 hands on this manufacture alone.

If the old potters had had to rely only on the thrower's wheel for their shapes, no improvement in whiteness of ware, or in the salt glaze, would have availed much to increase the demand for earthenware. The development of the various use of moulds became of the greatest importance. The six workmen required at such a potworks, as is shown on the 1710 list, would be—slipmaker, thrower, turner, "stouker," to put on handles and spouts, fireman and warehouseman. A good workman, such as the master, could throw, turn and stouk. But the fresh developments of the salt-glazed stoneware arising from the use of moulds converted potting into a specialized industry.

We have seen that Elers used metal seals to press his ornamental "spriggs" on to his teapots. Such metal moulds could only be used for small articles or ornaments, for the mould stuck to the clay, and had to be carefully oiled. Both for the "sprigging on" of ornaments, and for the shaping of ware, a new form of mould was wanted. At first the alabaster of Derbyshire supplied the want. It was


BURSLEM IN 1750
Scale 100 yards to the inch
Based on a plan by Enoch Wood
Sytch Brook
The Sytch
Hill Meadow
Oxley Croft
Oldfield
The Hill
Taylor's Hill
The Jenkins
Big Hill
Little Hill
Big Furlong
Furlongs
Kiln Croft
Birch Croft
Malkins Moor
Upper Hadderidge
Lower Hadderidge
Velvet Croft
Daniels Croft
Robin's Croft
Middle Croft
Meadow
Glebe Lands
Cross Hill
The Hough
Barnfield
Dale Hall was 150 yds west of this spot
Present Ry. Station entrance is 30 yds. E. of this spot
To Newcastle
To the Hamil
To the Bricars & Chell
Path to Rushton Grange
Thos Shaw
Moses Marsh
Jno. Mitchell
Wm. Horden
Thos. Bennet
John Simpson
Wm. Stevenson
Potworks
Overhouse
Mr Thos Mitchell
Hill Top
John Mitchell
Sarah Cartlich
Ranle Buckley
Bridget Shaw
Josiah Simpson
Mme Egerton
John Wood (fuseman)
Xtopher Owen
Ric. Parrott
Jno Taylor
Ric. Hume
Shoe Lane
Ruffleys
Sam Lees
Gabriel Bolla
Sarah Bagnall
Thos. Lockett
Mary Dean
Wm. Burn
Jno. Heath
Ann Cliff
Sarah Simpson
School Ho.
Paul Sheldon
Tim Lockett
P.H.
The Maypole
Ditchfield
Ric. Daniel
Thos. Clews
Ric. Wood
Aaron & Taylor
Joseph Molkin
Thos Fletcher
Thos Pearson
Timothy Daniel
Red Lion P.H.
Jno. Lovatt
Dr Mawson
Geo. Thos. Cartlich
Norbury
Sam Hardern
Jno. Marsh
Snord Pile
Ellen Wedgwood
Wm Wedgwood
Ellen Wedgwood
Aaron Shaw
Torkard Head
P.H.
Big Ho.
Jane Baggaley
Moses Marsh
Wm. Bickley
Thos. Burn
Wm. Marsh
Packhorse P.H.
Salathiel Ball
Ric. Onions
Jno Hurd
Abner Wedgwood
Sally Potters P.H.
Thos. Lovatt
Butcher
Moses Copeland
Ralph Allen
Ka Cartlich
Wm Allen
Jos Plant
Wm Mear
Thos. Green
Sarah Simpson
Eliz. Hall
Ric. Beech
Ric. Beech's Smithy
Ann Bould
Mary Harding
Ph Rathbone
Step. Cartlich
P.H.
Jos. Myatt
Thos. Copeland
Thos. Needham
Sarah Stevenson
Beech's Barn
Lane
Ed. Adams
J. & T. Taylor
Ro. Adams
Jno. Daniell
Court House P.H.
Bear P.H.
Jos. Adam
Moses Marsh
Aa
Leigh
Jno. Daniell
Nathan Poff Smithy
Talbot P.H.
Jno. Daniel
Ed. Field
Step. Burn
Hy. Daniel
Thos. Simpson
Jno. Harvey
Eliz. Harvey
Jno. Mellor
Mansfield
Shoulder of Mutton P.H.
Mary Taylor
Sam Malkin
Knowle Works
Ann Wood
Jno. Burn
Jos. Scarratt
Jno. Stanley
Jno. Steel
Jno. Ward
Sam Cortlich's Flash Works
Jas. Bennet
Sam Stonley
Ric. Fletcher
Ric. Burn
Wm. & Timothy Lockett
Thos. Harvey
Aaron Cartlich
Wm. Barker
Jos. Stevens
Robt. Daniels Holehouse Works
Thos. Steel
Thos. Wedgwood
Church Ho.
Isa Grundy
Ath. Wedgwood
Sam Bowers
Geo. Wood
Ric. Cartwright
George Thos. Abrams
Oldfield
Mary Gater
Jos. Morsh
Mary Kartlich
Joshua Ball
Joseph Morsh
Jonathan Adams
Daniel
Ann Noder
Is. Noder
Ro. Adams
John Adams Brickhouse
Ro. Burn
Jos. Hurd
Smithy
Moses Copeland
Thos. Lovatt
Butcher
Ralph Allen
Jno. Adams
Ro. Cartlich
Wm. Brammer
Ro. Stevenson
Aa. Clowes
Jno. Daniell
Jno. Mellor
Mansfield
Step. Burn
Hy. Daniel
Thos. Simpson
Jno. Harvey
Eliz. Harvey
Ric. Fletcher
Ric. Burn
Wm. & Timothy Lockett
Thos. Harvey
Aaron Cartlich
Wm. Barker
Jos. Stevens
Robt. Daniels Holehouse Works
Thos. Steel
Thos. Wedgwood
Church Ho.
Path to Rushton Grange
Isa Grundy
Ath. Wedgwood
Sam Bowers
Geo. Wood
Ric. Cartwright
George Thos. Abrams
Oldfield
Mary Gater
Jos. Morsh
Mary Kartlich
Joshua Ball
Joseph Morsh
Jonathan Adams
Daniel
Ann Noder
Is. Noder
Ro. Adams
John Adams Brickhouse
Ro. Burn
Jos. Hurd
Smithy
Moses Copeland
Thos. Lovatt
Butcher
Ralph Allen
Jno. Adams
Ro. Cartlich
Wm. Brammer
Ro. Stevenson
Aa. Clowes
Jno. Daniell
Jno. Mellor
Mansfield
Step. Burn
Hy. Daniel
Thos. Simpson
Jno. Harvey
Eliz. Harvey
Ric. Fletcher
Ric. Burn
Wm. & Timothy Lockett
Thos. Harvey
Aaron Cartlich
Wm. Barker
Jos. Stevens
Robt. Daniels Holehouse Works
Thos. Steel
Thos. Wedgwood
Church Ho.
Path to Rushton Grange

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carved into shaped blocks, and from the blocks were made "pitcher," or porous clay moulds, which could be replaced when worn out from the blocks, and could be used in various ways for the manufacture of ware: for sprigging, pressing, or "casting." Then—a last step—about 1745, Ralph Daniel, of Cobridge, brought from France the secret of plaster of Paris moulds which replaced both pitcher and alabaster.*

Under competition, the Staffordshire potters were getting critical. The white salt-glazed ware was competing with Chinese porcelain, and had to be made as thin and light and transparent as possible. The ware made by pressing the clay into the moulds sufficed for plates, basins and any lead-glazed ware, but it came out much too heavy for complicated shapes such as sauce-boats, teapots and vases, etc. To get these shapes Elers would have had them thrown and turned down in the lathe: they would all have been round. The process known as "casting" in a mould produced a finer result, and gave infinite scope for variation.

In casting, the clay is run in a liquid form into

*Shaw, *op. cit.*, p. 163.

a porous mould. After standing a few minutes, the slip is run out again, leaving behind a clay shell. This "cast" shell, taken out when dry, may be as fine and as varied in shape as the skill of the potter and the heat of his furnace will permit.

The process of casting came into use about 1730, and the carving of these moulds (in alabaster first, from which the "pitcher" mould could be made), became the most critical operation of all the potter's work. This work required all the skill and artistic instinct of the carver and of the designer. Block-cutters, as they were called, became famous. The best known were the two brothers, Aaron and Ralph Wood of Burslem. Aaron Wood (1717–85) was bound apprentice in 1731 to Dr Thomas Wedgwood, some of whose best models he is supposed to have made.* He afterwards worked for J. Mitchell, of Burslem,† and for Wheildon of Fenton, acquiring such a reputation that he was allowed to work in a locked room, that his art might thereby be kept secret.

*Shaw, *op. cit.*, p. 150, 151. †Shaw, *op. cit.*, p. 153.

CHAPTER V.

THE BEGINNING OF THE FACTORY.

THE industry was entering on a new phase. The introduction of moulds had required specialized block-cutters, flat and hollow-ware pressers and casters. And the specializing in the mixtures of the clay body lead to further changes. Till 1740 the same clay body served for both salt glaze and lead glaze, but about this time manufacturers began to specialize in either salt *or* lead glaze, and to use different bodies and mixtures to suit the varied glazes.

And, just as they had to arrange to import clays, so they had also to arrange to export their wares. A London agent, a Liverpool agent, perhaps a Birmingham agent became necessary. This sort of business could no longer be carried on by a master potter on sixteen shillings a week. The master potter became a capitalist. No business could be successfully carried on with a turnover of one ovenful a week. The first attempt to increase the

output was made by either one Shrigley, of Burslem Hadderidge,* or by John Mitchell of the Hill Top.† As no potter, so goes the story, had ever had more than one oven, their inventive faculty went no farther than to construct a larger oven than usual. The pioneer, whoever he was, built a new one so large that it collapsed, to the great joy of his conservative rivals. Soon afterwards, however, the Baddeleys, said to have been the sons of a Moddershall flint-grinder, put up behind their factory at Shelton a row of no fewer than four ovens; and about 1743, Thomas and John Wedgwood, known as "of the Big House," built a tiled factory with five ovens.‡

The family of Baddeley continued as master potters in Shelton into the nineteenth century. They were, with the exception of Wedgwood and possibly Warburton, the largest exporters of earthenware of their day.§ Their cream colour was good, but their renown with later generations is due to their basket-pattern salt glaze, often perforated. John Baddeley died in 1772, but the

*Ward, *op. cit.*, p. 230. † Shaw, *op. cit.*, pp. 152, 153.
‡ Shaw, *op. cit.*, p. 161. § Wedgwood's Letters, II, 24.

family carried on the making of enamelled and plain salt glaze to a later date than other manufacturers, certainly after 1780, and good salt glaze of late date is usually ascribed to the Baddeleys of Shelton.* The Wedgwoods of the Big House made the white salt glaze of a somewhat earlier description—the cast hexagonal cups and teapots in plain white—and with such financial success, that they built for themselves in 1750 a "Big House" in Burslem, which stands to this day at the corner of the Market Place looking south down the new Waterloo Road.† It is now the Conservative Club. Thomas was an expert thrower to begin with, and John the best oven fireman in the town.‡ They retired from business in 1765 with a large fortune.

It is said that in 1750 no fewer than sixty factories were making salt glaze in the Potteries, and every Saturday, for five hours at the time of firing up, the whole country was black with the smoke of the burning salt—so black, it is said, that people groped their way through the streets of

* Burton, *op. cit.*, p. 102.

† Shaw, *op. cit.*, p. 161. ‡ Shaw, *op. cit.*, p. 157.

Burslem. But meanwhile Enoch Booth at Tunstall had invented the fluid lead-glaze destined in time to turn plain earthenware into "cream-colour"; Josiah Wedgwood at Burslem was already devising new mixtures which should convert "cream-colour" into "Queen's Ware"; and in Hot Lane, near by, John Warburton was starting that enamelling work which, applied to the Queen's Ware, was to make it the standard earthenware of the whole world. These three potters were to alter entirely the course of the industry, and make salt glaze a thing of the past, for museums and collections. Unfortunately they did not abolish the smoke.

Enoch Booth had married Ann, daughter of Thomas Child of Tunstall. It was on his father-in-law's land that, about 1745, he started the first considerable earthenware factory in Tunstall. Booth was the legitimate successor of Astbury. He took the earthenware body, white as Astbury had left it, and, instead of using it for salt glaze, he worked out the most suitable lead glaze, and the best way of applying it to the piece. Instead of dusting it over the ware in the dangerous dry

condition, he ground the lead ore up with flint and clay and water. Into this fluid glaze the ware was dipped. Not only did this give a uniform glossy coat on each piece of ware, but different pieces were all glazed alike. Booth had the ware dipped after it had been fired, while it was in the porous or "biscuit" condition but sufficiently firm to be handled. A second firing to fuse on the glaze was given to the ware after dipping. These two firings, in the biscuit oven and in the "glost" oven, are the ordinary processes of manufacture to this day. Shaw gives 1750 as the date of this important improvement;* it is possible that fluid glazes were used before this and by others, but it was the combination of fluid glaze and double firing that is important, and this with some certainty we may put down to Enoch Booth and the year 1750.

Booth's original factory at Tunstall was probably the "Old Bank" at the corner of Cross Street and Well Street, but he extended his works at an early date over the whole of the area now bounded by Well Street, Market Square, High Street and Calver Street, where he built the Phœnix Works.

*Shaw, *op. cit.*, p. 176; and Ward, *op. cit.*, p. 49.

Sometime before 1781 * he had been succeeded by Anthony Keeling who had married his daughter Ann. Anthony Keeling built Calver House in 1793, but his trade suffered in the French wars, and in 1810 he retired from business and went to Liverpool where he died in 1816.† The Phœnix Works were carried on by Thomas Goodfellow till they were pulled down about 1860.

Ware, besides being thrown, moulded or cast, and coated with the transparent glaze of salt or lead, requires decoration. This decoration could be given by coloured clay slips, after the manner of the old Toft dishes, or after the manner of Ralph Shaw's "graffiato" ware, or as what is called "scratched blue." But decoration could also be given by means of enamelling paints. Paints that is which are mixed with glass, and, on being heated, fuse into the glaze and become fast. This enamelling was in the early days a special trade and no part of the potter's business. The shopkeeper might, if he liked, employ somebody called an enameller to enamel his particular cups and saucers. The enameller used a small "muffle"

*Shaw *op. cit.* p. 201. †Shaw, *op. cit.*, p. 93.

Scratched blue salt glaze cup, dated 1750. From the Stoke-on-Trent Museums.

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stove where the ware could be heated sufficiently to fuse the glaze and paint together, while at the same time it was kept away from direct contact with flames or smoke.

The best enamellers were to be found in London, engaged in enamelling the porcelain of Bow and Chelsea; but it soon became obvious that enamellers were wanted in the Staffordshire potteries also. It was again two Dutchmen who initiated into this art the native potters of Staffordshire. They probably knew the Warburtons and set up their enamelling ovens near them in Hot Lane.* Here they worked and attempted to keep their art secret, with the usual result of attracting special attention. Their stoves, their mixtures and their temperatures soon became public property, and a regular enamelling industry was soon established round Hot Lane. It is said to have been Ralph Daniel, the man who had brought the secret of plaster of Paris moulds from Paris, who did most to develop enamelling.† He imported workmen from London, Bristol and Liverpool, and soon after 1750 the enamelling of earthenware and

* Ward, *op. cit.*, p. 283. † Shaw, *op. cit.*, p. 179.

salt glaze became a Staffordshire industry. Among enamellers too should be mentioned a Shelton potter, Walter Edwards, who was chemist and enameller as well as potter. He had as partner the Rev. John Middleton, curate of Hanley from 1737-1802, but Edwards, unlike the curate, died young in 1753, leaving a book full of receipts for glazes and enamels. The difficulty always was to get metallic oxides which would stand heat.

From an artistic point of view they had much better have left their salt glaze plain white, or drab, or uniformly tinted by a slip dip. The salt-glaze body compared with Chinese porcelain; their painting did not compare with Chinese painting, or only compared in an unfortunate sense for Staffordshire. Earthenware, being made for use, had less decoration, and what it got was less gaudy and more suited for serviceable articles.

There was however one very successful, or at least artistically successful, manner of colouring the salt glaze. It was practised by William Littler and Aaron Wedgwood (1717-1763), two brothers-in-law who about 1740 were making salt-glaze pottery at Brownhills. Taking a hint from Ast-

Enamelled salt glaze jug, probably by Baddeley of Shelton, dated 1760. From the Stoke-on-Trent Museums. The jug was a presentation piece from the Rev. J. Middleton, who was a partner with the above Baddeley.

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bury, they dipped their ware in a bath of carefully lawned slip, so as to gave it a smooth surface before firing. In this slip they proceeded to put cobalt, which gave a beautiful uniform blue to the whole piece, and this smooth blue body, under the salt glaze, acquired a tint of great brilliance. On the strength of Shaw's account of this process,* many writers have mistakenly attributed to William Littler and Aaron Wedgwood the first introduction of liquid glazes, but it is quite clear, as Mr Burton has pointed out, that this was no leaded blue glaze, but a blue slip subsequently glazed with salt.†

Their success with the salt glaze induced Littler and Wedgwood to make the first attempt to produce real porcelain in Staffordshire. The proper distinction between earthenware and porcelain is the complete vitrification of the body in the case of porcelain, as opposed to the vitrifying and glazing of the surface only in the case of earthenware.

The Bow porcelain factory had started in 1744, Chelsea in 1745, Worcester in 1751. In 1752

* Shaw, *op. cit.*, p. 168. † Burton, *op. cit.*, p. 104.

Littler and Wedgwood left their Brownhills factory and removed to Longton Hall. Here they began to make the well-known Longton Hall porcelain. Perhaps Wedgwood or Littler had worked at Chelsea. However that may be, the porcelain manufactured was of the Chelsea type. The body was largely made of ground glass, while china clay, the basis of true porcelain, was not used at all. The characteristic feature of this Longton Hall porcelain is the bright under-glaze blue that previously adorned Littler's salt-glaze ware. This Longton Hall factory only continued till 1758.* Owing to the lack of demand for this kind of ware, they lost all their money in the venture and finally discontinued it. The stock-in-trade is said to have been bought up by Duesbury, who transferred it to the Derby porcelain factory, started in 1756.† It was not till the discovery of China Clay and China Stone and of their fusing properties in 1768 that porcelain was again attempted in Staffordshire. Through his daughter

* J. H. Nightingale, "Old English Porcelain," *passim*.

† Burton, "History and Description of English Porcelain."

Ann this Aaron Wedgwood was the grandfather of William Clowes, known as the "founder" of Primitive Methodism.

While the manufacture of salt glaze was flourishing, more especially at the northern end of the district, the old soft-fired earthenware, mottled, black and cloudy, was still being made, and the old slip decorated ware had not entirely vanished. But the only famous potter in what might be called the old Staffordshire style was Thomas Whieldon.

Thomas Whieldon began making pots at Little Fenton about 1740. He was a better educated class of man than the ordinary potter. He potted well; enjoyed trials and experiments for their own sake; and, through his connection with both Wedgwood and Spode, he may be said to have had the same influence on the taste and education of the Staffordshire potters that Elers had unintentionally half a century before. If we are to believe Shaw, writing in 1828, he began in a very humble way. He says: "In 1740 Mr Thomas Whieldon's manufactory at Little Fenton consisted of a small range of low buildings, all thatched. His early productions

were knife hafts for the Sheffield cuttlers; and snuff boxes for the Birmingham hardwaremen, to finish with hoops, hinges and springs; which he himself usually carried in a basket to the tradesmen; and being much like agate they were greatly in request."*

Plot mentions how the old potters used to marble their ware by combing together the different coloured slips, just as the paper on the inside of book-bindings is now marbled. Whieldon carried on this imitation work, and made it artistic and important. Instead, however, of marbling the slip or the glaze, he marbled his clay body in the solid. Flat "bats" of clay of different colours—coloured either naturally or else artificially with manganese, cobalt or copper—were laid on each other, and pressed and sliced again and again; care being taken to preserve the same run of the grain. In this way a streaked body was produced, which, when pressed into moulds, retained the curious markings of agate or marble. This was Whieldon's "solid agate," with which the new trade in snuff boxes and knife handles was supplied.†

*Shaw, *op. cit.*, 155. †Burton, "English Earthenware," p. 111.

He made toys, too, and chimney ornaments of this same new material, or else glazed with brilliant coloured glazes in splashes of irregular colour. He made larger goods also—teapots, dishes and vases in solid agate. All these were pressed in moulds; and for moulder or block-cutter he had, from about 1746 onwards, the celebrated Aaron Wood. The cream-coloured body, with Enoch Booth's transparent lead glaze, afforded Whieldon another material on which to work. He took the colourless fluid glaze and turned it madder brown with manganese, or yellow with iron oxide, or green with copper, or blue with cobalt. Then he mixed them to give every shade of coloured glaze, and laid these glazes on the ware to give infinite variety. In this way he produced those beautiful tortoiseshell wares for which he is most renowned. His agate ware is solid; his tortoiseshell ware is a glaze.*

He had acquired fame as a skilful potter before Josiah Wedgwood joined him in 1754, and probably produced already both the solid agate and the tortoiseshell. In his last popular production—

*Burton, *op. cit.*, p. 114-5.

the melon, cauliflower, and pineapple wares, with their brilliant green glaze—it is probable that Wedgwood's incessant experiments played a decisive part.

Besides having Wedgwood as a partner, he had in his employ such examples of the new race of potters as Josiah Spode, Robert Garner, J. Barker, and Wm. Greatbach. Jewitt* has preserved for us some of the hiring books and accounts of Thomas Whieldon, in which the names and pay of three of these four apprentices occur, and which, as they are unique evidence of wages, are here given:

1749			
Jany 27	Hired Jno Austin for placeing white &c. per week	5	6
	Pd his whole earnest†	3	0
Feby 14	Then hired Thos. Dutton	6	6
	Pd 1 pr Stockings	3	6
	Earnest for vineing (? veining)	15	0
	. . . . .		
Feby 20	Hired Wm. Cope for handleing and vineing cast ware	7	0
	Pd his whole earnest	10	6
28	Hird Robt. Garner per week	6	6
	Earnest	10	6

*L. Jewitt, "The Wedgwoods," pp. 112-7.

†"Earnest money" was the lump sum paid to a workman on his entering into his servitude.

	Pd him towards it		1	0
	I am to make his earnest about 5s. more in something.*			
Mar 8	Then hired Jno Barker for ye huvels (ovens) @		5	6
	Pd earnest in part		1	0
	Pd it to pay more		1	0
	. . . . .			
Ap. 9	Hired Siah Spoade, to give him from this time to Martelmas next 2s. 3d., or 2s. 6d. if he deserves it			
	2nd year		2	9
	3rd year		3	3
	Pd full earnest		1	0
	. . . . .			
June 2	Hired a boy of Ann Blowers for treading ye lathe, @		2	0
	Pd earnest			6
	. . . . .			
1751				
Jany 11	Then hired Saml. Jackson for Throwing Sagers and fireing, per week		8	0
	Whole earnest	2	2	0
	Pd in part	1	2	0
	Pd more [*sic*]	1	1	0
	. . . . .			
1752				
Febry 22	Hired Josiah Spoad for next Martlemas, per week		7	0
	I am to give him earn'		5	0
	Pd in part		1	0
	Pd do.		4	0
	. . . . .			
1753				
June 21	Hired Wm. Marsh for 3 years. He is to have 10s. 6d. earnest each year, and 7s. per week. I am to give an old coat or something abt 5s. value.			
	. . . . .			

*An example of truck wages.

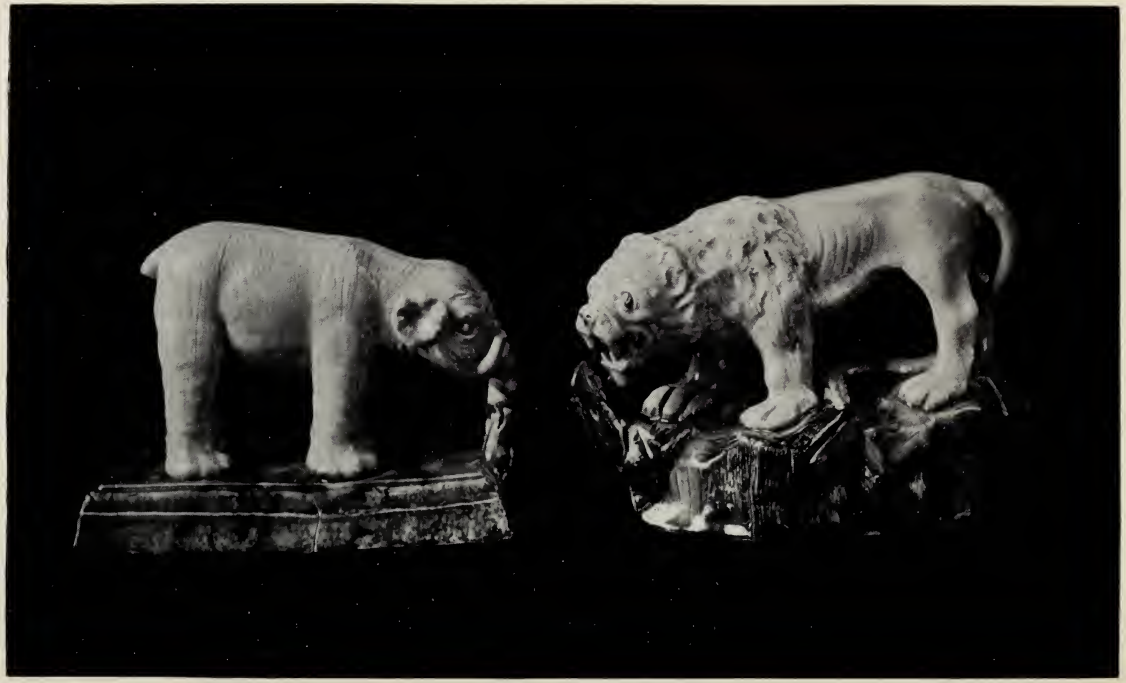
Aug. 29	Hired Westaby's 3 children, per week		4	0
	Pd earnest			6
	. . . . .			
1754				
Feby 25	Hired Siah Spode per week		7	6
	Earnest	1	11	6
	Pd in part		16	0

Apparently workmen were hired by the year,* and the highest wages paid were 8s. a week. It will be seen that there has been practically no increase in wages since the early days of the century. One wonders where Wedgwood and Spode obtained the capital wherewith to start their businesses.

Josiah Wedgwood was Whieldon's partner from 1754 to 1759. One of the stipulations of the partnership is said to have been that Wedgwood might keep his experiments to himself. It is certain that he did experiment extensively, and we may attribute to him the green glaze and successful patterns of the "cauliflower" and "pineapple" wares.† It would be a mistake to depreciate these patterns as

*It is recorded of the Rev. J. Middleton, Master Potter and Curate of Hanley, *c.* 1750, that he refused to hire men by the year, deeming it slavery. It was not till 1866 that the Trade Unions put an end to the annual hiring of grown men by a year's binding agreement.

†Burton, "English Earthenware," p. 119.



Staffordshire figures decorated with Whieldon glaze, probably by Wedgwood. *c.* 1760. Stoke-on-Trent Museums.

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being unsuitable and vulgar imitations of nature. The natural shapes were adapted and conventionalized in a thoroughly artistic way, as anyone who looks at Whieldon's or Wedgwood's samples of this ware preserved in the South Kensington Museum can see at a glance. Slavish imitations there were later, but that was not Whieldon's way.

Taste changed, however, and Whieldon's wares became unfashionable. It is only of quite recent years that the agate and marble, perfected later by Wedgwood, or the quaint cottage chimney ornaments and tortoiseshell ware of Whieldon, Wedgwood and Ralph Wood, have come to be valued as a native and genuine Staffordshire art. When Whieldon found that his market had left him he made no attempt to follow in the wake of his pupils, and about 1780 retired from business. His factory was just south of the present railway station at Stoke, and he built and lived in the house which still looks down upon the Trent and the railway. In 1786 he served as High Sheriff for the county. He died in 1798, and is buried at Stoke. His widow died in 1828, and one of his sons, Edward, was for many years Rector of Burslem, and lived

at Hales Hall, near Cheadle. But his descendants are now no longer to be found in the potteries.

We know of two other manufacturers who made agate and tortoiseshell ware—Daniel Bird, called "the flint potter" because of his experiments with different proportions of flint in the clay body,* and John and Thomas Alders of Cliff Bank. There were probably many others. These two made buttons and knife handles very largely. Both worked at the Stoke end of the Potteries.

Before entering on the fresh epoch in the History of Potting which opens with the work of Wedgwood, it will be as well to recount the end of the salt-glaze industry. It was a risky manufacture. The ware was thin, and many accidents happened in firing. Therefore the ware was costly; and only small pieces could be so glazed. The fluid lead glazes used by the skilful potters of the latter half of the century gave a surface smoother and more suitable for food. The demand for ornamental salt glaze was small, and the enormous demand for useful ware sent all the best potters into the useful trade; while in the ornamental lines Wedgwood's

* Shaw, *op. cit.*, p. 157.

Greek and Etruscan shapes entirely ruled the market. All these causes conspired to ruin the salt glaze, and by 1770 it had fallen into general disuse. The last considerable makers of salt glaze were the Baddeleys and Christopher and Charles Whitehead of the Old Hall, Hanley.* No single maker of salt glaze occurs on the 1787 lists. It was a fine ware, characteristic of and peculiar to Staffordshire, and when one considers the difficulties under which its production was carried on, a tribute of praise is due to those potters who so quickly developed it to its highest state of perfection.

Shaw had an account, from the lips of an old man of eighty-three, born in 1720, showing the conditions under which this old-world industry was carried on.† And before we come to the modern life with its canals and steam and complete "factory system," it is worth while to give this recollection of potting in 1750.

"Ralph Leigh was employed by John Taylor of the Hill Top, to look after his horses, and was the first man whose wages were raised from 10d. to 12d. a day. With four or six horses he went

*Ward, "Stoke-on-Trent," p. 372. †Shaw, *op. cit.*, pp. 148-9.

twice to Whitfield, or thrice to Norton, in a day for coals; of which each horse brought 2½ cwt. on its back; along lanes extremely dirty. At the pit, coals then cost 7d. the draught, whether 2, 2½, or 3 cwt., for the colliers guessed at the quantity. The charge for carrying each load from Norton to Burslem was 3d., a penny a mile.* During a long time he carried crates of pottery to Winsford, and brought back ball clay. Each horse carried a crate on a pack saddle, and a small panier on each side was used to hold two or three balls of clay, weighing 60 or 70 lbs. Each horse was muzzled to prevent it biting the hedges, and the roads were narrow and bad and without toll gates. Afterwards with a cart and four horses he went to Winsford and delivered his crates the same day; and on the second day brought back a ton of Chester clay to Burslem. He was allowed four days to take crates to Bridgenorth, and bring back shop goods for Newcastle. He went with crates to Willington Ferry, and returned with flint, plaister stone and shop goods. He has gone to Liverpool and also as far as Exeter, before there were regular carriers."

* This makes 6s. 8d. a ton delivered at the Pot Bank.

ETRURIA WORKS

CHAPTER VI.
WEDGWOOD AND THE CREAM COLOUR.

SUCH were the conditions under which the salt glaze of Staffordshire and the agate of Staffordshire were produced and perfected; and having traced these manufactures to their climax, it now remains to describe the rise of cream-coloured earthenware—the cream colour, which under Wedgwood became universal and perfected as we know it to-day. But it would be a mistake to attribute all good cream colour to Wedgwood. Just as all red teapots get put down to Elers; or as salt glaze is divided between Dr Thomas Wedgwood and Astbury according to character; and just as all another class of ware with irregular splashes of coloured glaze is called "Whieldon," so much that Wedgwood never put his hand to has got dubbed with his name, to the exclusion of contemporaries as enterprising, such as Warburton and Turner, and to the neglect of predecessors who,

like Astbury and Booth, had already done very much to make Wedgwood's development of the cream colour possible.

The ordinary earthenware cream-colour body was composed of ball clay from Dorsetshire, calcined flint, and the lighter burning local clays. After the discovery of china clay and china stone in Cornwall about 1770, these two bodies both came to be added to the standard mixture, and the local clays were gradually dropped.* The glaze in-

* Professor Church quotes the following memorandum, done in red enamel on the back of a large dish of Wedgwood's Queen's Ware in the possession of Mr Sidney Locock:—"This dish was made at Etruria by Messrs Wedgwood & Bentley, the first year after Messrs Wedgwood & Bentley removed from Burslem to Etruria. Ric. Lawton served his apprenticeship at turning with them, and has had it in his house more than fifty years. It is my brother William's modelling. It was turned on a hand lathe, as plates were at that date. I preserve this to show the quality of common cream ware before the introduction of growan or Cornwall stone. This body is formed of flint and clay only, the same as used for salt-glazed ware at that time, and flint and lead only instead of salt glaze, and it is fired in the usual and accustomed way and manner, as usual for glazed tea-pots, tortoiseshell, mottled, and agate, and cauliflower, &c. Also sand from the Mole Cop and Baddley Edge was used either in the body or glaze. N.B. Before flint was used they used a certain proportion of slip for the body in the glaze to prevent crazing, and to make it bear a stronger fire in the glaze oven. I was the first person that made use of bone in earthen-

vented by John Greatbach while at Etruria, and called "Greatbach's China Glaze," finally completed the development of the cream colour.* In practice the results depended so largely upon the exact composition of body and glaze, the exact temperature of firing in biscuit and glost ovens, and the subsequent decoration, that different potters achieved different results from their cream ware, and very different reputations. Josiah Wedgwood, with whom we must now deal, with his so-called Queen's Ware, achieved undisputed pre-eminence, and became the greatest agent in the world-wide distribution of the cream-coloured earthenware of North Staffordshire.†

ware when in my apprenticeship at Mr Palmers at Hanley Green.

Burslem, Sept. 26th, 1826. ENOCH WOOD."[1]

[1] Church, "English Earthenware," pp. 81-82.

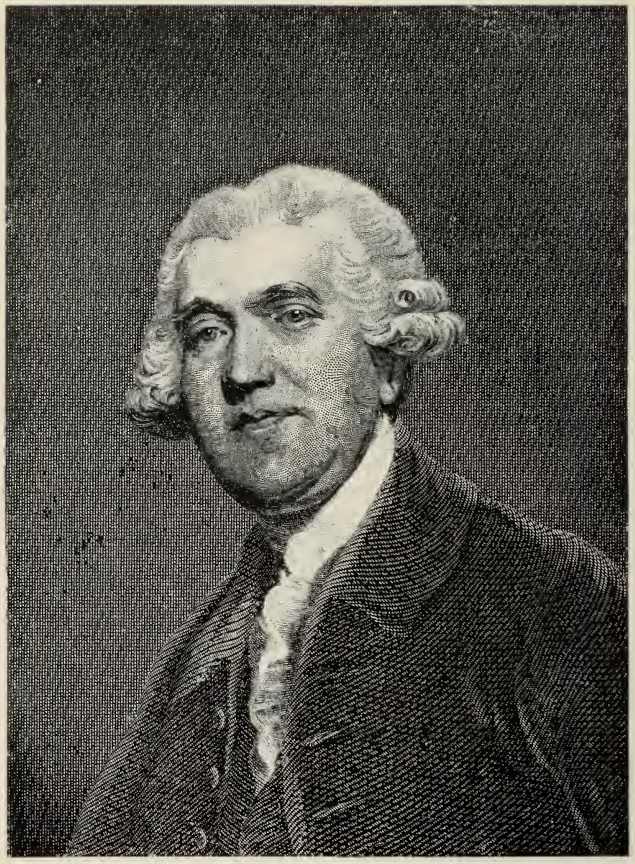
* Shaw, *op. cit.*, p. 184.

† Many "lives" of Wedgwood have been written, and this is not the place to repeat them. Miss Meteyard has two large volumes on him; Jewitt has one; Smiles holds him up in a recent work as a model of self-help; Professor Church has written a monograph on him and his Jasper Ware; and lastly, Mr Elbert Hubbard, of New York, has made his courtship and marriage the subject of an exhaustive and wholly imaginary study. But many of these works, and some of the Histories of Potting too, are marred by indiscriminating eulogy and a fertile imagina-

Josiah Wedgwood, thirteenth child of Thomas Wedgwood, master potter of the Churchyard works in Burslem, was baptized in Burslem church on July 12, 1730. He was a son, grandson and great-grandson of potters. His brothers, his cousins and his uncles made pots, and many had left an enduring reputation behind them. Josiah too was apprenticed to the trade in 1744 in his eldest brother's works by the Churchyard side at Burslem.

In 1752 he went into partnership with John Harrison, a tradesman of Newcastle, and they took the factory of the Alders' at Cliff Bank, Stoke. Here they turned out the agate knife-blades and buttons that Alders had produced before. In two years Wedgwood was able to leave this partnership and join with Whieldon, the best potter of the day. For five years at least these two men were in partnership. Whieldon supplied the skill and

tion. Simeon Shaw, for instance, within 120 pages, manages to distinguish no fewer than 47 favoured manufacturers by name with praise of this stereotyped character:—"of whom we may observe that great professional ability is in him joined with philanthropy, and a readiness to accelerate every meritorious enterprise." This, however, is perhaps preferable to the style:—"Wedgwood, poor dear, old soul, got terribly worried," which distinguishes another of these Histories.



Truly and affectionately yours,

J. WEDGWOOD

Etruria, 14th Feb. 1774

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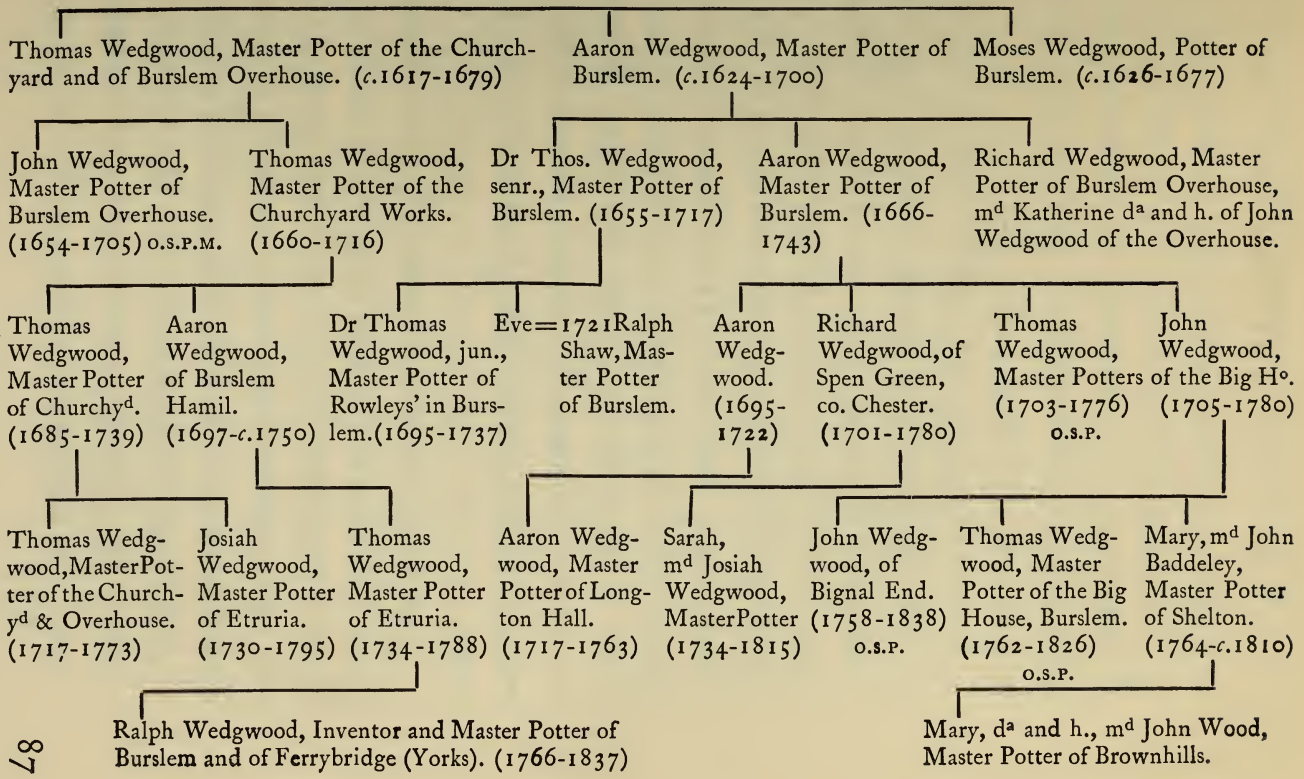
The Relationships between the various members of this family that have been mentioned in the course of this history are shown on the following outline pedigree:—



traditional knowledge, and Wedgwood the extraordinary energy which was his chief characteristic. His experiments were incessant, and the fine green glaze seen on his cauliflower ware, his first real success, was his reward.

As soon as he was able to afford a factory of his own, he went back to Burslem, and in 1759 he hired, from his uncles John and Thomas Wedgwood of the Big House, a factory known as the Ivy House Works. Here, or at the "Brick House" Works which he hired in 1762,* he made cauliflower, cream colour, and, later, black basalt ware. There worked for him at the Ivy House Works a first cousin, Thomas Wedgwood, who afterwards became his partner in the production of "useful" ware.

A great number of the letters of Josiah Wedgwood have survived, and they show the chief cause of his success to have been his restless passion for experiment and novelty, coupled with an almost American love for the extension of business —particularly profitable business. He was first a skilful potter, secondly a pushing man of business,

* Wedgwood MS., Bills for carting goods to the "new works."

and only thirdly, perhaps, a great artist. When he broke with his stick some imperfect vase, saying, "That won't do for Josiah Wedgwood," it was not because the delinquent vase offended his taste, but because it might damage his reputation and the sale of his wares. He wanted perfection, and he got perfection; but he wanted it to sell, as a business proposition. And when we find him wondering whether he can keep up the price of his common cream plates to four shillings a dozen, while the other potters have brought their price for the same plates down to two shillings a dozen,* then we catch a glimpse of how well it paid.

The cream-coloured Queen's Ware was the chief product of Wedgwood's early times in Burslem. It was at first decorated, when required, by the widow Warburton, of Hot Lane. But the invention of the cheap method of printing designs on to the glazed ware, made in 1755 by Saddler and Green of Liverpool, provided an excellent substitute for enamelling on the more useful ware. Wedgwood used to send his ware to Liverpool to be printed, and was often there himself, importing clay, or

* Wedgwood's Letters, II, 24.

looking after the export trade to America, then, as now, the most important branch of the export trade. It was on one of these visits to Liverpool that he first met his life-long friend, Thomas Bentley, a dissenting radical merchant of the Clapham school, who became his partner in 1768.*

Wedgwood had moved entirely into the Brick House Works, afterwards called the Bell Works, early in 1763, but in 1766 he bought the Ridge House estate of about 150 acres in Shelton, where he proceeded to build his new "Etruria"—factory, dwelling house and village. The Etruria works were opened for the production of the black basalt and other ornamental ware in 1769, and here ever since his descendants have carried on the same work. The factory at Burslem continued to produce the useful cream colour, and in this branch of the business, his cousin Thomas Wedgwood was his partner from 1766 till his death in 1788. In 1773, however, Wedgwood, finally closed down the Burslem works, and transferred the last of the "useful" work to join the rest at Etruria.†

* Meteyard's "Wedgwood," I, 486.

† Meteyard's "Wedgwood," II, 235.

Wedgwood was now becoming famous. In 1765 he opened his first London warehouse under the charge of his brother John.* After John Wedgwood's death in 1766,* he finally induced Bentley to take permanent charge of the London office and showrooms, which became a sort of fashionable lounge.

But that which chiefly brought Wedgwood before the public was his determination to secure better transport facilities to and from the Potteries. In 1762 he and others were busy pressing for a new turnpike road† from Cliff Bank, on the Newcastle and Uttoxeter turnpike, through Burslem to the "Red Bull" at Lawton, on the London, Newcastle and Liverpool road.‡ The petition sent up on this occasion gives a description of the state of the industry which is worth quoting. The petition says:—

"In Burslem and its neighbourhood are near

* Wedgwood's Letters, 1.

† The converting of a road into a turnpike road was the only way in which it could be kept in really good repair. Tolls were charged and used partly to repair the road and to attract more traffic.

‡ Wedgwood's Letters, 1.

500 separate potteries for making various kinds of stone and earthenware, which find constant employment and support for near 7000 people. The ware of these potteries is exported in vast quantities from London, Bristol, Liverpool, Hull etc., to our several colonies in America and the West Indies, as well as to almost every port in Europe. Great quantities of flint stones are used in making some of the ware, which are brought by sea from various parts of the coast to Liverpool and Hull; and the clay for making the white ware is brought from Devonshire and Cornwall chiefly to Liverpool, the materials from whence are brought by water up the rivers Mersey and Weaver to Winsford in Cheshire; those from Hull up the Trent to Willington; and from Winsford and Willington the whole are brought by land carriage to Burslem. The ware, when made, is conveyed to Liverpool and Hull in the same manner.

"Many thousand tons of shipping . . . are employed in carrying materials for the Burslem ware; and as much salt is consumed in glazing one species of it as pays annually near £5000 duty to Govern-

ment. Add to these considerations the prodigeous quantity of coal used in the Potteries . . . and it will appear that . . . those who are supported by the pot trade, amount to a great many thousand people; . . . and the trade flourishes so much as to have increased two-thirds within the last 14 years."*

The determined opposition of the Newcastle tradesmen and inn-keepers, afraid of loss of traffic, prevented the full scheme being carried out. The Bill, as passed in 1763, provided for the turnpike from Lawton as far as Burslem only.

A Newcastle and Leek turnpike through the future Etruria and Cobridge followed. On February 1, 1765, we find Josiah Wedgwood writing to his brother John in London, "we have another turnpike broke out amongst us here betwixt Leek and Newcastle, and they have, *vi et armis*, mounted me upon my hobby-horse again. . . . He carried me yesterday to Leek, from whence I am just returned much satisfied with our reception there. Tomorrow I wait upon Sir Nigel (Gresley) to beg his concurrence, and on Monday must attend

*Jewitt, *op. cit.*, pp. 162-3

a meeting to settle the petition etc. at Mony Ash at yr frd Isaac Whieldons. We pray to have the Utoxeter and Burslem turnpike joined [i.e. Cliff Bank, Shelton, Cobridge and Burslem], and to have the road made turnpike from Buxton and Bakewell to Leek, and from Leek to Newcastle. Whether or not our good friends at Newcastle will give us battle on this occasion we do not know, if they do there will be some probability of my having a comm^{n} and seeing the great City again. £2000 is wanting for this road. My uncles Thos. and John (of the Big House) have, I am quite serious, at the first asking subscribed . . . *five hundred pounds*. I have done the like intending 2 or 300 of it for you, and if you choose any more you must let me know in time." *

What these roads were like one can gather from Arthur Young's travels. He describes the road from Knutsford to Newcastle as "in general a paved causeway, as narrow as can be conceived, and cut into perpetual holes, some of them two feet deep; a more dreadful road cannot be imagined. . . .

* Wedgwood's Letters, 1.

Let me persuade all travellers to avoid this terrible country. . . ."*

Yet even these roads and lanes seem to have been moving with the times, for we hear, in 1763, of one Daniel Morris introducing wagons and carts for the first time, and acting as carrier.† "Pot-wagons" now took crates of ware to Bewdley on the Severn and to Willington Ferry on the Trent. The general rate of transport was 9s. per ton for 10 miles. To the port of Liverpool the rate was 28s. per ton, but flint and clay up from Liverpool cost only 15s. a ton.‡ To Willington the charge was 35s. a ton; and the transit down the river to Hull was almost as expensive.

The Duke of Bridgewater was at this time developing his estates in Cheshire by means of the great Bridgewater Canal. In 1761 it was open from Manchester to Worsley, and James Brindley, "the schemer," was engaged in extending it to tide-water below Warrington. Brindley was already well known in the Potteries. He was born

* A. Young, "Tour thro' the North of England," iii, 433.
† Meteyard, *op. cit.*, i, 273.
‡ Wedgwood's Letters, iii, 249.

in the High Peak in 1716, and after serving his apprenticeship as a mill-wright at Macclesfield, and designing many improvements in spinning factories and mine drainage, he settled more or less in the Potteries. In or about 1758 he put up a windmill for grinding calcined flint on an estate called the Jenkins, near Burslem, belonging to John Wedgwood of the Big House; and many other pieces of engineering for the convenience of potters were invented by him. But in 1759 he commenced, under the Duke of Bridgewater, those 365 miles of canal which made his name famous.*

Acting under the orders of Lord Gower and Lord Anson, Brindley had, in 1758, made a preliminary survey for a canal to connect the Trent and Mersey. The success of the Bridgewater canal caused this project to be revived in 1764, and an association was formed to obtain Parliamentary powers. In December of that year a meeting was held at Lichfield between Lord Gower and others, at which they discussed the conflicting interests of the proprietors, the landlords, the manufac-

* "Dict. Nat. Biog.": "Jas. Brindley."

turers and the public.* The scheme was dropped for that session, but all through 1765 Wedgwood, who saw the prime importance of this new method of transport, was engaging support, combating the opposition of rival interests, and getting Bentley to issue pamphlet after pamphlet showing all its advantages.

At last, on May 14, 1766, the Bill received the Royal Assent. On June 3, a meeting of the proprietors was held, presided over by Lord Gower. There were present Lord Grey, Mr Bagot, Mr Anson, Mr Gilbert, Mr Smith of Fenton, Mr Sam. Robinson and others. A committee was formed and the following officers appointed:

"James Brindley, Surveyor General, £200 per ann.
Hugh Henshall, Clerk of the works, £150 „ „
T. Sparrow, Clerk to the proprietors, £100 „ „
Jos. Wedgwood, Treasurer, £000 „ „
out of which he bears his own expenses, and it was ordered that the work be begun on immediately, both sides of Harecastle and at Wilden." †

The first sod was cut by Wedgwood on July 26 at Brownhills, between Burslem and Tunstall,

* Wedgwood's Letters, 1. † Wedgwood's Letters, 1, pp. 85-7.

before a great concourse of people, and we are told that an ox was roasted whole for the populace.*

The Trent and Mersey canal is 93 miles long, with 75 locks, and rises at the Harecastle tunnel to a height of 326 feet above the Mersey. It is 20 feet broad at the top, 16 feet at the bottom, and 4 feet 6 inches deep, and it cost £300,000.† It is carried on aqueducts over the Dove, Trent and Dane, and there are five tunnels. It was pushed on by Brindley with great energy till his death, and completed at last in 1777 by Hugh Henshall, his son-in-law, together with a branch to the Severn from Great Haywood. Brindley died at Turnhurst in Wolstanton on Sept. 27, 1772. In 1786 we read that freight for general goods on the canal was 1¼d. per ton per mile, or less than one-seventh what freight cost before the canal

* Ward, *op. cit.*, p. 154.

† Wedgwood's Letters, III, p. 31.

The original proposition was for a canal 3 feet deep in general, but at the fords only 30 inches; and the original estimate of cost, excluding the tunnel, was £700 a mile south of Harecastle and £1,000 north of that place. The tunnel, a single one, was to cost £10,000.—Wedgwood's Letters, III, p. 290.

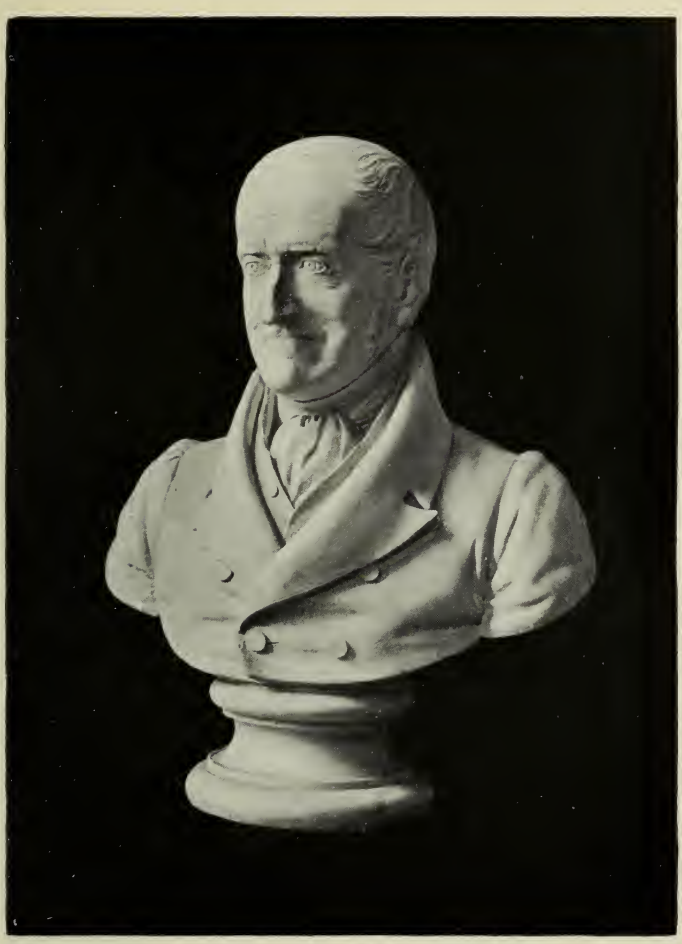
was cut.* At the same time the £200 shares in the canal were standing at £600-£700 apiece.† It was carrying over 1,350,000 tons of goods and minerals a year in 1849, when it was bought out by the railway company for £1,170,000.

A fresh development of the potting industry took place even while this canal was building. China clay and china stone were discovered by Cookworthy in Cornwall. This was in 1768, and Cookworthy took out a patent for the use of these materials. He never succeeded in producing porcelain on a commercial scale, and in 1773 sold his patent rights to Richard Champion.‡ Mr Champion was one of the chief supporters in Bristol of Edmund Burke, member for that city, and conceived in 1775 the idea of getting with his aid a Bill passed through Parliament to extend the patent which he had bought from Cookworthy for a further seven years. But china clay and china stone had during these last few years been proved of value not only for making china, but also as a constituent of the clay body used for making the

* Wedgwood's Letters, III, p. 30.
† Wedgwood's Letters, III, p. 206.
‡ Burton, "Porcelain, a Sketch," p. 251.

cream-coloured earthenware of Staffordshire. It had been imported and used by Wedgwood, Turner of Lane End, the Warburtons and others, and an extension of Cookworthy's patent, giving to Champion of Bristol the monopoly for seven more years of the right to use this material, whether for making china or earthenware, was naturally resisted by the earth potters of Staffordshire. In this opposition Wedgwood and Turner took a leading part; and their action has been criticized by many who thought they saw in Champion the struggling inventor penalized by pushing capitalists. From another and as reasonable a point of view Champion was a speculator who tried to use political influence to increase the value of a monopoly that he had bought on a different basis. As Mr Burton says, "It certainly seems that the fullest justice was done when Champion was allowed an extension of the patent for the use of china clay and china stone *in porcelain*, the only substance ever produced by Cookworthy or Champion, and the other potters were allowed to use the same materials in earthenware bodies."*

* Burton, "Hist. Porcelain," p. 135.



WILLIAM TURNER, MASTER POTTER
Fl.: 1780

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Yet for the part he played in this business John Turner was afterwards made to suffer and in this manner. On Lord Gower's estates he discovered a clay which made a singularly hard white body, but the agent for the Earl, remembering, it is said, the action Turner had taken against Champion, told him he might look for his clays elsewhere, and refused to let him work the clay.

The use of china clay and china stone, and the new glaze called "Greatbach's china glaze," completed the perfection of the cream-coloured earthenware, and Wedgwood drifted more and more away from the agate and cauliflower ware of his youth to the new body—the Queen's Ware.* Cream colour for the table—printed, enamelled or plain—became ever more important. In 1770 he received an order for an enormous dinner service from the Empress of Russia. Each piece was to have enamelled on it a different view of some English gentleman's seat. To complete this extraordinary order artists and enamellers were collected from the whole country, and set to work at Chelsea under Bentley's guidance. The results do not seem

*Burton, "English Earthenware," p. 128.

very attractive. A picture of a gentleman's seat, generally in black or drab on a cream-coloured plate, is only interesting. A good border pattern is the most suitable decoration for a dinner plate.

Having got his staff of enamellers together, Wedgwood decided to do his own enamelling in future instead of sending his ware to the Warburtons to be enamelled.* The sober border decorations of his tea and dinner ware, which is to some tastes the very best part of his work, were done at Chelsea by these artists. His most successful patterns are mere enamelled borders, perfectly enamelled on perfectly potted plates.

But this was "useful" ware, and all the time he was aiming at the development of his ornamental ware along classical lines. The black basalt—plain; the black basalt—decorated with encaustic red paintings unglazed, after the manner of the Etruscans; the jasper vases and plaques; all are attempts to reproduce the survivals of Greece and Rome. This neo-classic style, if not original, was at least a change from the endless rococo of Dresden, and the shepherdesses of Chelsea and

* Meteyard, *op. cit.*, II, 118.

HACKWOOD, THE MODELLER

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Sèvres; and, compared with the "art china" productions of the first half of the nineteenth century, the copies of even decadent Rome seem to be the acme of good taste. One is also tempted to regret that in them the whole art of the potter is devoted to the most exact reproduction of bronze, of Parian marble, of natural cameos, or even of the glassy Barberini Vase. The reproduction is splendid, and probably nothing would have shocked Wedgwood more than to think that posterity could prefer his lavender tea service, or the vine pattern on his Queen's Ware.

It is however undoubtedly on his jasper that his fame with succeeding generations has been based:—the white classical figures, designed by Flaxman or by Hackwood, embossed on a blue or black ground. The discovery of the jasper body, with its admixture of barium sulphate, gave him a perfectly white hard stoneware body, which would take a high fire, and become semi-vitrified without glazing. The body could be stained light or dark blue, pink, green or black, by the addition of suitable oxides, and then formed the ground of his jasper ware; while the white body, pressed into

small plaster moulds, taken out and then "sprigged on," formed the ornamental embossments. This jasper ware could be used, and is still found, as panels in Adam fireplaces, with Flaxman's "Dancing Hours" or "Medusa Head" clean cut on the blue plaque; as cameo medallions, bearing the heads of personages of state, for show cabinets; or as vases under a glass case, such as the Portland Vase, completed in 1790. And it is this jasper ware that is called to mind when "Old Wedgwood" is spoken of by amateurs. A proper description is impossible here of these Jasper or Black Basalt vases, statues or plaques, in which he received the invaluable assistance of Flaxman as a modeller, and the advice of every gentleman of the period who prided himself upon his taste. Description of manufacture and details of patterns must alike be left to special monographs, such as that of Prof. Church.

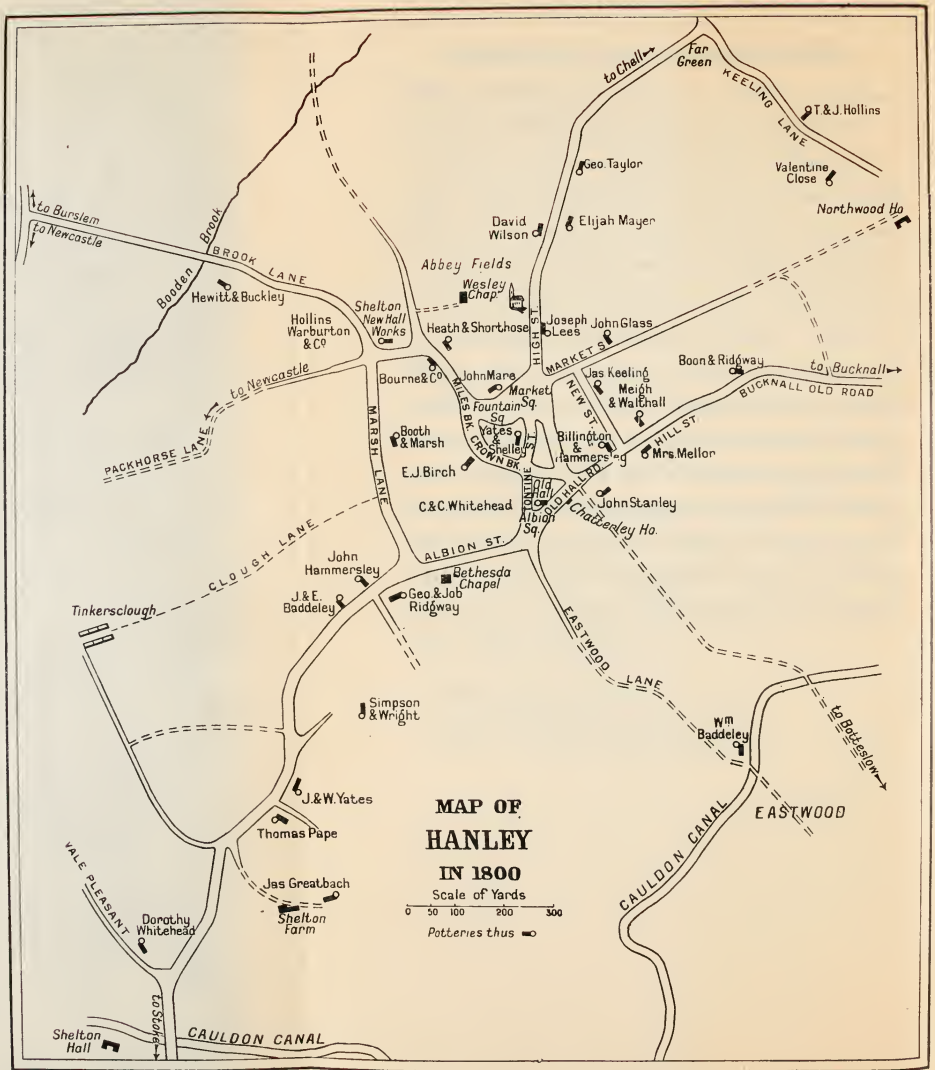
To complete a bald account of Wedgwood's career as a potter we must add the following notes. Between the years 1759 and 1769 he perfected the cream colour, between 1766 and 1769 the black Etruscan ware was brought to its highest perfec-

tion; the jasper body and glaze was undergoing development from 1773 to 1777, and the jasper dip from 1780 to 1786. His mechanical bent showed itself in a persistent and successful effort to develop the turning lathe so as to give a ribbed surface to the ware. This he called "engine turning," and it is a device which has been largely employed ever since on decorative pieces. In 1783 he invented a neat pyrometre for registering the heat of ovens, and was elected in consequence a Fellow of the Royal Society. His great partner Bentley died in 1780, and for a few years Wedgwood carried on his works alone; but in 1790 he took into partnership his three sons John, Josiah and Thomas, and his sister's son Thomas Byerley. The style and title of the Firm which had been "Wedgwood and Bentley" from 1768-80, "Wedgwood" from 1780-90, now became for a short time "Wedgwood, Sons and Byerley." In 1793 his sons John and Thomas, having no aptitude for the systematic work of a master-potter, and being rich enough to be idle, retired from the firm, and conveyed their shares to the younger Josiah. Till

Thomas Byerley's death in 1810, the firm was known as "Wedgwood, Son and Byerley."*

Josiah Wedgwood himself died on January 3, 1795. He bequeathed to his second son Josiah his share in the factory and an estate of 363 acres in Stoke and Hanley, and to his other children a fortune of about £160,000.† Mr Burton sums up the result of his work as follows: "His influence was so powerful, and his personality so dominant, that all other English potters worked on the principles he had laid down, and thus a fresh impulse and a new direction was given to the pottery of England and of the civilized world. He is the only potter of whom it may truly be said that the whole subsequent course of pottery manufacture has been influenced by his individuality, skill and taste."‡

* Jewitt, *op. cit.*, p. 319, etc.
† See his Will, Jewitt, *op. cit.*, pp. 413-9.
‡ Burton, "English Earthenware," p. 151.



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CHAPTER VII.
AT THE END OF THE EIGHTEENTH CENTURY.

WEDGWOOD'S financial success with his Jasper and Black Etruscan ware, a success hitherto quite unique in the experience of the Potteries, led every potter of any capacity to attempt the same lines. They cannot be blamed for trying to imitate what was demanded by the fashionable market. The whole progress of the industry had been based upon the copying of successful processes, and Wedgwood did not patent his patterns or methods, even could he have done so.

All over the Potteries they followed in his steps, content to reap with little trouble the advantages of his past labours—reproducing his patterns and avoiding all dangerous novelty. Invention died and the wares, tamely and ignorantly copied by inartistic workmen, sank artistically throughout the next half century. The copyist, imitator or

rival, who annoyed Wedgwood most in his lifetime was Humphrey Palmer of Hanley. Most of the Palmer and Neale ware we now know of seems original enough—and good enough—but from 1769-1776 Wedgwood regards him as a copyist of the most objectionable description.* It must be said however that he always stamped his imitations with his own name and not Wedgwood's; a precaution which is not always observed at this present day, even with a patent law to enforce a man's right to his own trade-mark. It is noticeable too that when Wedgwood did, in 1771, patent the method of painting with an encaustic red on the Black Etruscan ware, Palmer produced the same results and forced him to share the patent rights.† Palmer however got into financial difficulties, in 1776, and his business was taken over by his brother-in-law Henry Neale. Neale, in conjunction later on with David Wilson, continued the same style of ornamental ware, and so excellent are some of his granitic ornamental pieces now in museums that he must take rank as a rival

*See Wedgwood's Letters, *passim*.

†See Wedgwood's Letters, II, 30-2.

Vase by John Turner of Lane End. *d.* 1786.
From the Stoke-on-Trent Museums.

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rather than as an imitator of Wedgwood. Both Neale and Palmer had married daughters of that Thomas Heath who tried to make Delft ware at Lane End early in the century. Another daughter is said to have married Mr Pratt, a potter of Lane Delf, whose descendants have ever since continued to make pottery on what may be the very spot where Thomas Heath made his original Delft ware.*

John Turner, of Lane End, was another competitor of Wedgwood. He was almost as confirmed an experimenter, and produced a jasper ware very close on Wedgwood's heels. He was born in 1738,† and started his own works at Lane End in 1762, and his chief productions were the fashionable cream colour and a cane-coloured stoneware. He was one of the first to appreciate the value of the newly discovered china stone for the cream-coloured body, and he therefore took an active part in opposing the extension of Cookworthy's patent. Afterwards, in 1775, he joined Wedgwood

*Shaw, *op. cit.*, p. 127.

† H. Wedgwood, "Romance of Staffordshire," III, 72, but see Shaw, *op. cit.*, p. 172.

in leasing some of the Cornish clay mines. A discovery of a good local clay at Green Dock, close by Longton Cemetery, led to his most characteristic production—the cane-coloured stoneware, ornamented with embossed decoration in the same colour. The material was also found very suitable for busts and statuettes. It is recorded that he could, in this material, make a most life-like representation of pie-crust, and that once, as a *tour de force*, he reproduced exactly an entire banquet with everything, from the roast beef to the custards, realistically translated into stoneware. It will be understood from this that there was room for a revival of taste in pottery. Turner's jasper is quite different to that of Wedgwood, or of those who made it when the secret of the mixture had become known. Its ground is an unfortunate slaty blue, which does not improve the appearance of the ware, and the designs of the bas-reliefs are rococo, which is worse than neo-classical.

John Turner died in 1786, and was succeeded by his two sons, John and William, who continued to produce black basalt as well as this strange

THOMAS MINTON
c. 1765-1836

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jasper. Their business was ruined by the French wars, and in 1803 they were compelled to close down. John Turner, jun., became manager to Thomas Minton, then starting his historic factory in Stoke.

We have seen that Turner went to Lane End in 1762. "About 1750," says Shaw, but probably some years later, "Mr John Barker, with his brother and Mr Robert Garner, commenced the manufacture of shining black and white stoneware salt glaze at the Row Houses, near the Foley, Fenton, where afterwards they made tolerable cream colour. They realized a good property here; and Mr R. Garner erected a separate manufactory and the best house of the time in Lane End, near the old Turnpike Gate."* This was after 1762, for among the Wedgwood MSS. is an account of that date from Messrs Robert Garner and J. Barker jointly for brown china tea-pots and pine-apple jars supplied to Wedgwood at Burslem,† doubtless to complete an order. Roger Woods too is said to have built in 1756 a factory, afterwards known as Sampson Bridgwoods, by the brook at

*Shaw, *op cit.*, p. 170. †Wedgwood MSS.

the Lower Market Place in Longton. And about the same time Thomas and Joseph Johnson started making good salt glaze just opposite Lane End church.*

In this manner potting spread to the Longton end of the Potteries. In 1756 there are said to have only been 100 houses in Longton and Lane End, and even by 1773 an old estate map of the Heathcotes' shows but 180 houses, or a population of less than 1,000.

As early as 1770 we obtain a familiar glimpse of the working of the factory system. Some of the master-potters in that year tried, for the first time on record, to form a ring to keep up prices. The bond runs as follows: "We whose hands are hereunto subscribed do bind ourselves . . . in £50 . . . not to sell . . . under the within specified prices, as witness our hands: John Platt, John Lowe, John Taylor, John Cobb, Robt. Bucknall, John Daniel, Thos. Daniel jun., Richd. Adams, Saml. Chatterley, Thos. Lowe, John Allen, Wm. Parrott, Jacob Warburton, Warburton and Stone, Jos. Smith, Joshua Heath, John Bourn, Jos. Stephens, Wm.

* Shaw, *op. cit.*, p. 171-2.

Smith, Jos. Simpson, John Weatherby, J. and Rd Mare, Nic. Pool, John Yates, Chas. Hassells, Ann Warburton and son, Thos. Warburton, Wm. Meir." A list of prices for dishes, tureens, saucers, etc., is given; and manufacturers of the present day will be interested to see the first attempt at checking those "rebates" which have successfully broken down this and all subsequent attempts to keep prices artificially high. "To allow no more than 5 per cent for breakage, and 5 per cent for ready money." Then follows a sentence which misled Shaw and made him think that these potters made salt-glaze stoneware: "To sell to the manufacturers of earthenware at the above prices, and to allow no more than $7\frac{1}{2}$ per cent, beside discount for breakage and prompt payment."* It was the custom of many, particularly the larger manufacturers, to buy ware from other makers, either to decorate, or, more usually, to complete orders in lines which they did not happen to have in hand; (orders were far more all-embracing in those days). Thus we find William Greatbach starting a works at Lower Lane in 1762 under an agreement with

*Shaw, *op. cit.*, p. 206-8.

Wedgwood to be paid by him fixed prices for his ware.* In any case Shaw is obviously wrong in calling these men salt-glaze potters, for makers of salt glaze did not usually apply it to the baking dishes and chamber pots whose prices were under discussion; and it is only in common and standard lines that prices can ever be regulated by a ring. Makers of ornamental salt glaze would have been the last people to combine, and the only ones known to have been making salt glaze at this time, Christopher Whitehead and the Baddeleys, do not appear on this list of Shaw's at all.

The most notable potters on this list of 1770 were the Warburtons and the Daniels of Cobridge. When the art of enamelling became localized at Hot Lane about 1750, John and Ann Warburton were among the most successful. They were potters of old standing, for a Warburton appears as a master-potter in the Burslem district in 1710-15. They did most of the enamelling for Wedgwood in his early days, and their son, Jacob Warburton (1740-1826), became a potter of great repute, above all on the Continent where his busi-

* Wedgwood MSS.

ness was very extensive.* He spent many years travelling abroad and was a strange man among the rough potters of that day—a Roman Catholic, a great linguist, a famous skater; and for some reason he was always known as Captain Warburton. He was an intimate friend of Wedgwood, and in 1771 acted as his arbitrator in his case against Palmer.† When Enoch Booth invented the fluid glaze, the Warburtons were among the first to take it up, and their cream-coloured ware, enamelled with all their exceptional artistic skill, is often confounded with Wedgwood's best productions.

But to Jacob Warburton the Potteries are chiefly indebted for the revival of Littler's attempt to introduce the manufacture of hard paste porcelain into Staffordshire. It will be remembered that Richard Champion of Bristol had in 1775 obtained an extension of his monopoly of the use of china clay and china stone in the manufacture of porcelain. In spite of this monopoly he met with but little success in Bristol, and in 1781 he sold his patent to a company in Staffordshire—the first

*Burton, "English Earthenware," 152-3.
†Meteyard, "Wedgwood," II, 198.

instance recorded of a potting company. Of this company Jacob Warburton was the moving spirit. After John Turner, of Lane End, and Anthony Keeling, of the Phœnix Works in Tunstall, had withdrawn from the scheme, the company—consisting then of Warburton, Sam. Hollins (the red china potter of Shelton) and two financiers—settled their manufactory at Shelton New Hall.* Their porcelain is always spoken of as "New Hall China," but it was of little importance or artistic merit. John Daniel, son of that Richard Daniel who had introduced plaster of Paris moulds from France, was appointed manager and became a partner some years before his death in 1821.† Jacob Warburton himself died at Rushton in the old Abbey Grange in 1826, but even before that time the manufacture of hard paste porcelain at the New Hall had ceased.‡

Another enameller who attained success by perfecting the cream-coloured ware was Elijah Mayer. He is said to have been originally foreign agent for the Chatterleys, and as late as 1787 he appears

*Shaw, *op. cit.*, p. 201. †Ward, *op. cit.*, p. 373.
‡ Shaw, *op. cit.*, p. 205.

as an enameller pure and simple, though already in business on his own account. Soon after this date his factory at Hanley began turning out not only cream colour, admirably enamelled in the sober artistic style of Wedgwood's best Queen's Ware, but also black basalt, which is every bit as good and has as good a reputation as the best that was turned out at Etruria.*

Other very early makers of porcelain were Messrs Baddeley and Fletcher. For some time after 1763 they attempted, with William Littler as manager, to make glassy porcelain similar to that of Longton Hall. Mr Fletcher was the father of Sir Thomas Fletcher, M.P. for Newcastle, and ancestor of the Fletcher-Bougheys, Baronets of Aqualate. Mr John Baddeley the elder was the father of Ralph and John Baddeley, who carried on the works and made an early success with blue printed earthenware.†

The Chatterleys of Shelton were another very successful potting family of this date. Dr Samuel Chatterley made the ordinary black Egyptian tea-

* Burton, "English Earthenware," p. 162.
† Shaw, *op. cit.*, 199, 204.

pots, but Charles Chatterley went in for the newer cream colour and secured a large foreign connexion. His brother Ephraim became his partner, and ultimately carried on the business alone till 1793, when he handed it over to his nephews, James and Charles Whitehead, sons of Christopher Whitehead of the Old Hall Factory.* Ephraim Chatterley lived at what is now Chatterley House, and had the singular distinction of being, in 1784, the first of a long and honourable series of "mock mayors" of Hanley.† Though Hanley and Shelton were united in 1812, yet it was not till 1856 that they became incorporated as a borough, and obtained their first genuine Mayor, John Ridgway of Cauldon Place.

The list of potters of 1787, which has already been quoted from, occurs in a rare "Survey of Staffordshire" made by Wm. Tunnicliffe. The Survey consists of little but an itinerary of the main roads, and lists of the manufacturers in each town. As we have to rely so much on the fallible recollections of Shaw, this piece of contemporary evidence is worth quoting in full.

*Shaw, *op. cit.*, 209-10. †Ward, "Stoke-on-Trent," p. 367.

AT END OF EIGHTEENTH CENTURY

"Survey of the Counties of Stafford, Chester and Lancaster, compiled and published at Nampt-wich in 1787 by Wm. Tunnicliffe, land surveyor, of Yarlet near Stone; and a Directory of the principal merchants and manufacturers."

In the Potteries they give:—

Burslem.

(a) Wm. Adams & Co. Cream-coloured ware and China glaze ware painted.
Wm. Bagley, potter.
John Bourne, China glaze, blue painted, enamelled and cream coloured earthenware.
Bourne & Malkin, China glaze, blue painted, enamelled and cream coloured earthenware.
S. & J. Cartlidge, potters.
Thos. Daniel, potter.
John Daniel, cream colour and red earthenware.
Timothy Daniel, Do. do.
(b) Walter Daniel, Do. do.
John Graham jun., white stone, and enamelled white and cream earthenware.
John Green.
(c) Thos. Holland, black and red china ware, and gilder.
(d) Anthony Keeling, Queens ware in general, blue painted, and enamelled, and Egyptian black.
Timothy & John Lockett, white stone potters.
Burnham Malkin.
(e) John Robinson, enameller and printer of cream colour and china glazed ware.
(f) John & George Rogers, china glazed, blue painted, and cream coloured ware.
Ambrose Smith & Co., cream coloured ware, china glazed, blue painted.
John & Joseph Smith.
Chas. Stevenson & sons, cream coloured ware, blue painted.

Thos. Wedgwood, (Big House), cream coloured ware, china glazed, painted with blue etc.
Thos. Wedgwood, (Overhouse), cream coloured ware, china glazed, painted with blue etc.
James Wilson, enameller.
(g) John Wood, potter.
(h) Enoch & Ralph Wood, all kinds of useful and ornamental earthenware, Egyptian black, cane, and various other colours, also black figures, seals and cyphers.
Josiah Wood [*sic*, but should be Wedgwood], fine black, glazed, variegated and cream coloured ware, and blue.

Cobridge.

Joseph Blackwell, blue and white stone ware, cream and painted ware.
John Blackwell, Do. do.
Robert Blackwell, Queens ware, blue painted, enamelled, printed etc.
Thos. & Benj. Goodwin, Queens ware and china glazed blue.
Hales & Adams, potters.
Robinson & Smith, potters.
Jacob Warburton, potter.

Handley.

Sampson Bagnall, potter.
Joseph Boon, potter.
C. & E. Chatterley, potters.
(i) John Glass, potter.
(j) Heath [*sic*], Warburton & Co., china manufacturers.
Edw. Keeling, potter.
John & Ric. Mare, potters.
Elijah Mayer, enameller.
Wm. Miller, potter.
(k) Neale & Wilson, potters.
Samuel Perry, potter.
Geo. Taylor, potter.
Thos. Wright, potter.
John Yates, potter.

Shelton,

J. & E. Baddeley.
John Hassells.
Heath & Bagnall.
([l]) Samuel Hollins.
Anthony Keeling.
Taylor & Pope.
G. Twemlow.
([m]) Christopher & Charles Whitehead.
([n]) John Yates.

Stoke.

Sarah Bell, potter.
([o]) Hugh Booth, china, china glazed, and Queens ware in all its branches.
James Brindley, potter.
([p]) Josiah Spode, potter.
Joseph Straphan, merchant and factor in all kinds of earthenware.
([q]) Thos. Woolfe, Queens ware in general, blue printed and Egypt black, cane, etc.

Fenton.

Wm. Bacchus, Queens ware in all its various branches.
Edw. Boon, Queens ware and blue painted.
Taylor Brindley, potter.
Clowes & Williamson, potters.
John Turner, potter.
Josiah & Thos. Wedgwood, potters.

Lane End.

John Barker, cream colour, china glaze and blue wares.
Wm. Barker, potter.
Ric. Barker, potter.
([r]) Joseph Cyples, Egyptian black and pottery in general.
Wm. Edwards, potter.
Forrester & Meredith, Queens ware, Egypt black, red china, etc.
Joseph Garner, potter.

(s) Robert Garner, Queens ware and various other wares.
Michael Shelley, potter.
Thos. Shelley, potter.
Turner & Abbott, potters.
(t) Mark Walklate, potter.

(a) Of Greengates Tunstall; (b) afterwards of Newport; (c) of Hill Top; (d) of the Phœnix Works, Tunstall; (e) of Hill Top; (f) of Longport; (g) of Brownhills; (h) of Fountain Place; (i) of Market St.; (j) of Shelton New Hall; (k) of High St.; (l) of Vale Pleasant; (m) of Shelton Old Hall; (n) of Broad St. Works; (o) of Cliffgate Bank; (p) afterwards Copelands; (q) afterwards Adams'; (r) of Market St., Longton; (s) of the Foley Works; (t) of High St., Longton.

Of course this list is fallible. Josiah and Thomas Wedgwood potted at Etruria, not Fenton; John Turner, shown at Fenton, should probably be the Turner of Lane End; the Josiah "Wood" of Burslem is almost certainly Josiah Wedgwood, who owned at that time the old Churchyard Works, in which he had been born. (They were sold in 1795 to Thomas Green, and on his bankruptcy in 1811 passed to John Moseley). Again, both S. and J. Cartlich, and Wm. Adams, who certainly potted at Golden Hill and Greengates respectively, are included with other Tunstall potters in the Burslem list.

This William Adams of Greengates (1745–1805) * achieved a great reputation for his Jasper

* "Dict. Nat. Biog.": "William Adams."

WILLIAM ADAMS
1777-1805

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and Black Basalt ware. He was a cadet of the Adams family, a family which is almost as much identified with the potting industry as is the family of Wedgwood. Four generations had potted at Burslem "Brickhouse" in succession to Thomas Adams who died a "potter" in 1629, and at the end of the eighteenth century the representative of this branch of the family, another William Adams, was a master-potter at Cobridge, and could lay some claim to the introduction of under-glaze blue printing into Staffordshire. The life of Adams of Greengates is given in "William Adams —an old English Potter," Ed. by Wm. Turner, F.S.S. Born in 1745, he was apprenticed to Josiah Wedgwood, and became his most adept pupil. He commenced manufacturing on his own account at Greengates about 1787, and the jasper he turned out is difficult to distinguish from that of Wedgwood. No doubt he had full particulars of body and firing, but other potters had that information and yet failed to produce the same class of ware.* This William Adams died in 1805, and his son wasted his property and sold the Green-

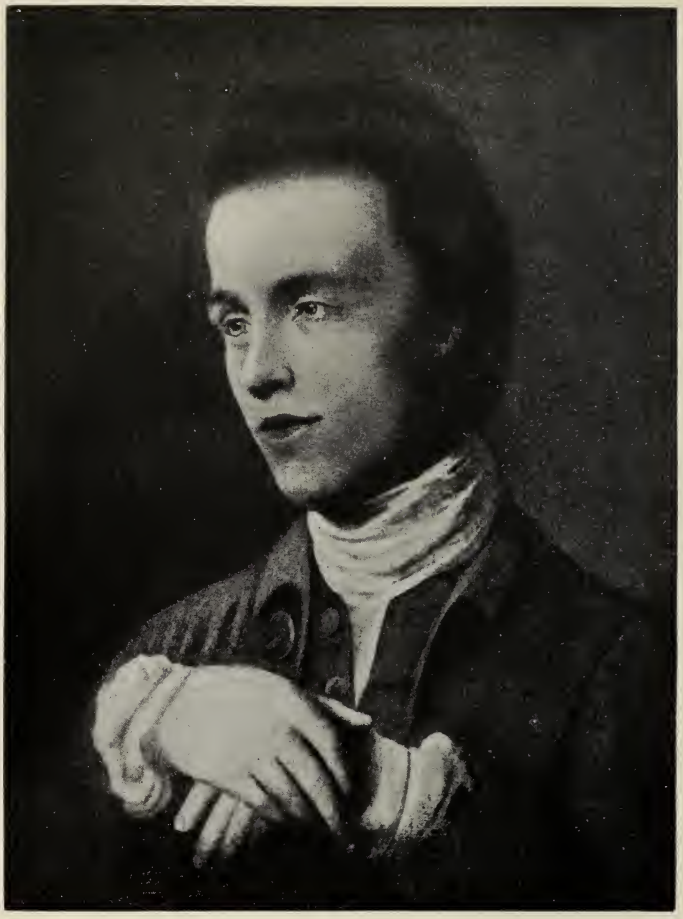
* Burton, "English Earthenware," p. 163.

gates works about 1820 to John Meir.* Of recent years, however, the Greengates works have been repurchased by the senior branch of the Adams family, and it is now managed in conjunction with their old Greenfield works adjoining.

For the first time in 1787 the mail coaches to London began to run daily. The best days of coach travel were yet to come, but even these early coaches kept up a steady seven miles an hour. Their time table is given as follows: London ("Swan with Two Necks") 9 p.m., St Albans 11 p.m., Coventry 9 a.m., Lichfield 1 p.m., Stone 5 p.m., Newcastle (149 miles) 7 p.m., Warrington 2 a.m., Carlisle 2 p.m.†

Three other potters on the 1787 list deserve special mention: John, Ralph and Enoch Wood. They all came of one still celebrated potting family. Ralph Wood, miller, of Burslem, was their common ancestor. His eldest son, Ralph, was a modeller of distinction, and about 1754 started a works at Burslem, where he, and his son Ralph after him, made those quaint Staffordshire figures now in such demand. They are usually decorated

* Ward, "Stoke-on-Trent," p. 103. † "Carey's Atlas," 1787.



JOHN WOOD OF BROWNHILLS
1746-1797

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with coloured tortoiseshell glaze, applied with a brush, and have a singularly decorative effect. Ralph Wood, the first figure maker of the name, married the sister of that Aaron Wedgwood who had once made china at Longton Hall. He died in 1772, and was succeeded in his work by his sons John and Ralph.* John Wood soon left his brother, and began, in 1782,† to pot at Brownhills. Ralph kept to figures, and adopted the enamel process of decoration for some of his busts and figures. Other makers who were prolific in this style of figure decoration were John Walton of Burslem (1800–40), Robert Garner of Lane End, *c.* 1786, son of that Robert Garner of the Foley Works who married Margaret Astbury, Ralph Salt of Hanley (1812–46), Lakin and Poole of Hanley (1770–94).‡

Meanwhile the eldest son, John Wood, was making ordinary earthenware at Brownhills. This John Wood was murdered in 1797 by Dr Oliver

* "Wedgwood's Letters," II, 140.

† Ward, "Stoke-on-Trent," p. 152.

‡ "Cat. of English Figures," Falkner and Sidebotham, p. 13, etc.

of Burslem, a rejected suitor of his daughter.* His son married the heiress of John Wedgwood of Bignal End, with whom he acquired a large fortune.† He removed the factory from Brownhills to Tunstall, where he erected the Woodlands Works in 1831-5.‡ A third John Wedg Wood of Brownhills carried on these pot works in Tunstall in partnership with Mr Edward Challenor. He died in 1857, and was succeeded at the Woodlands Works by his brother Edmund Thomas Wedg Wood. This factory was in 1887 sold to Mr W. H. Grindley.§

Ralph Wood, the miller, had another son—that Aaron Wood who made for himself so great a reputation as a block cutter when block moulds were first introduced and the salt glaze was at the height of its glory. Aaron Wood worked for Dr Thomas Wedgwood, Thomas Mitchell of the Hill Top Works, Burslem, and for Whieldon of Fenton. His eldest son, William, was apprenticed to Josiah Wedgwood in 1762, and worked with

* "Romance of Staffordshire," H. Wedgwood, III, 67.
† Ward, "Stoke-on-Trent," p. 152.
‡ H. Wedgwood, *op. cit.*, III, p. 53.
§ Scarratt, "Old Times in the Potteries," pp. 46, 47.

him, first at the Burslem "useful" works, and afterwards at Etruria, all his life long. Most of the Queen's Ware articles made by Wedgwood are said to be from block moulds of his carving.*

But it was the youngest son of Aaron Wood, Enoch by name, to whom potters of all time are most indebted, for he was the first collector of pottery. And he collected it to illustrate specially what his family and district had done, and how the industry had progressed. His splendid collection was never catalogued, and as it was divided into four parts at his death and scattered,† it is of less value than it ought to have been; but, without it, this or any account of the North Staffordshire Potters' work must have been a shadow indeed.

Enoch Wood (1759-1840) was apprenticed to Palmer of Hanley and remained there some time as a modeller. In 1783 he commenced business at

* Shaw, *op. cit.*, p. 170.

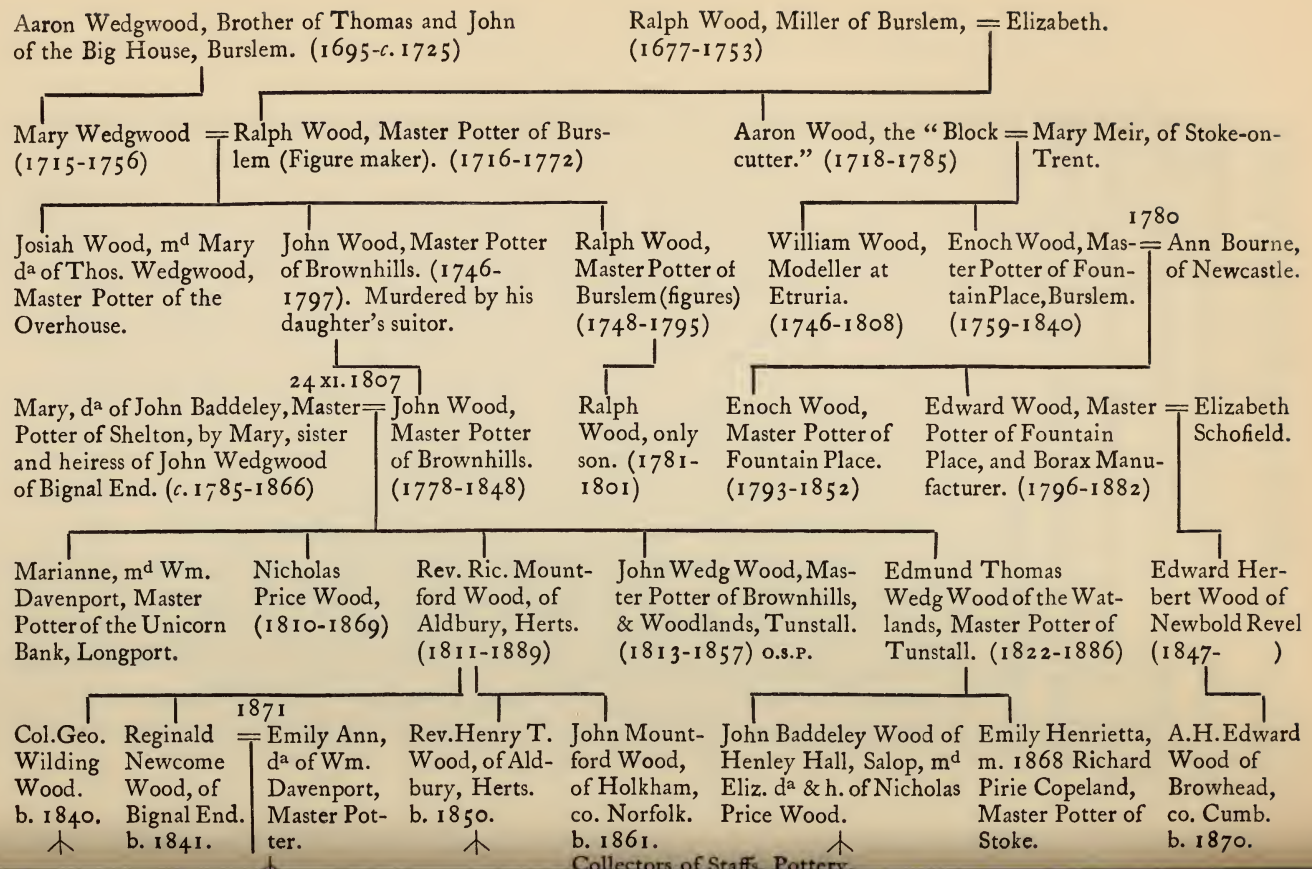
† One part is at present in the Royal Museum at Dresden, uncatalogued, and much of the rest has found its way into the Victoria and Albert Museum at South Kensington, though Mr Wood's catalogue, if it ever existed, is not there to illustrate and explain the pieces.

Fountain Place, Burslem, so called from the fountain or pump which he erected there for his factory and work people.* He was at first in partnership with his cousin Ralph Wood, who made the Staffordshire figures. About 1790 he was joined by James Caldwell of Lindley Wood, and the firm became "Wood and Caldwell." He bought Mr Caldwell out in 1819, and thenceforth conducted business as "Enoch Wood and Sons." He had 12 children and died in 1840 at Fountain Place, the patriarch of the Potteries. His most famous work probably was the well-known bust of John Wesley, made in 1781 when Wesley was stopping at his house during one of his preaching tours in the Potteries. His factory turned out the usual cream colour, black basalt and jasper,† but soon after his death the firm got into financial difficulties and closed down. His third son, Edward, was fortunate in being associated with a clever Italian, Count Kuntz, in the development of Italian borax, introduced into the Potteries first in 1828 as a flux for the glaze. In this new business

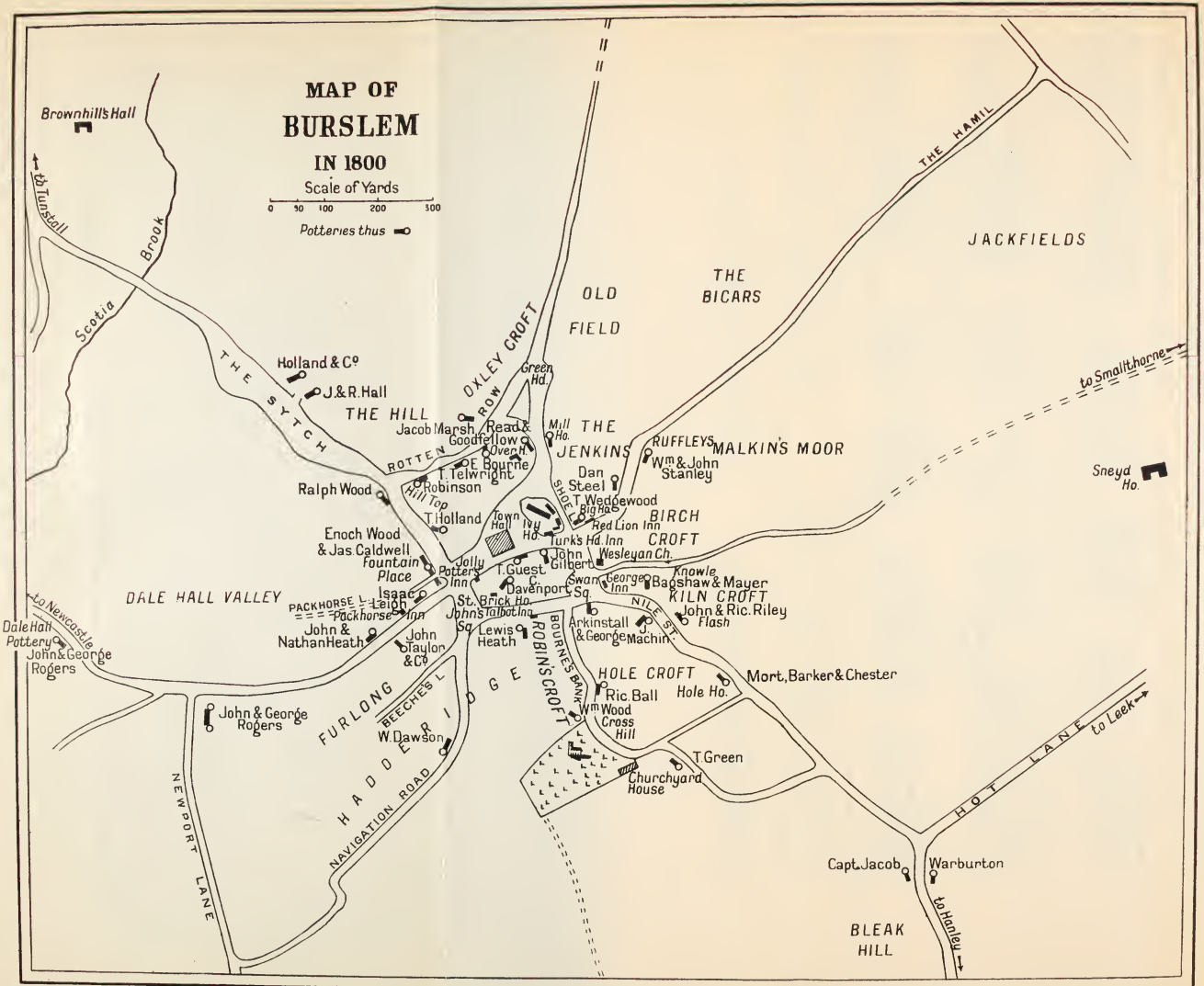
* Shaw, *op. cit.*, p. 223.

† A. H. Church, "English Earthenware," p. 96; and Burton, "English Earthenware," p. 166.

they realized a fortune, and Edward Wood's decendants are now settled at Browhead in Cumberland. But the borax works in Newcastle are carried on as "H. Coghill and Son" by Douglas and Archibald Coghill.



Collectors of Staffs. Pottery



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CHAPTER VIII.

SPODE AND BLUE PRINTING.

WHEN earthenware or salt glaze was enamelled at Hot Lane it required artists to do the work. But the eighteenth century was the age of mechanical invention, and the hand artists were continually being superseded by mechanical processes. Saddler and Green, for instance, invented the method of printing designs on top of the glaze, so that the artist had only to fill in the outline with colours. But there was something hard and crude about the effect of the on-glaze printing, which prevented it ever really competing with the best hand-painted ware. The under-glaze printing, particularly the under-glaze blue printing, was a more difficult competitor for the artist to meet; for the glaze gave a rich soft tone to the colouring matter underneath it which was partly absorbed in the biscuit ware. And if this blue printing, with which the willow pattern will be always associated, drove out the girl artists from

their pleasant work on the pot-banks, yet the new decoration caused an enormous expansion in the demand for cream-coloured earthenware. From 1790 onwards "blue printed" seems to have superseded every other sort of earthenware. It was the first opportunity common folk had had of getting a decorative plate to eat off; and it made the fortunes of the Spodes, the Adamses, the Bournes, the Mintons, the Ridgways, and many another master of the good old days. As a mechanical process under-glaze printing was an unqualified success, and in course of time the artists too rediscovered their work in decorating that porcelain which, on the tables of the rich, replaced the now vulgarized earthenware. The last ten years of the eighteenth century were devoted to blue printed, but with the new century came that development of Staffordshire porcelain with which run the names of Spode, Minton and Davenport.

The first Josiah Spode made no porcelain. He set the fashion in "blue printed," and his blue printed is probably the best of its kind ever made. Born in 1733, Spode was apprenticed to Whieldon, and after leaving him about 1759 he worked for

Banks of Stoke.* It is said of him that he dearly loved to play the fiddle, and he would go out any evening to play at public-houses for his friends. So that "ready and willing as Spode's fiddle" became a proverb in the Potteries.

In 1770 he leased Banks' works in the centre of Stoke, and began making printed cream colour. This was the old "on-glaze," or "black" printed ware, used to guide the enameller rather than as a decoration by itself. Cobalt was a cheap paint, and the designs were filled in with blue. This was becoming the common ware, and invention was busy to simplify the process. Attempts were made by William Adams of Cobridge and, about 1777, by John Baddeley of Shelton to print in blue upon the biscuit ware before the ware was glazed, but without any commercial success.† It was Turner of Worcester who first found a satisfactory way of transferring an oily-coloured pattern from a copper plate to a sheet of transfer paper, and then from the paper to the biscuit ware. He too designed the willow pattern which seems likely to characterize

*Shaw, *op. cit.*, p. 215; and Burton, *op. cit.*, p. 160-1.
†Shaw, *op. cit.*, p. 212.

"blue printed" for all time. This was in 1780, and in 1783 Spode got two men from the Caughley china works, near Worcester, and they taught him to print in blue under the glaze on earthenware, as they did on china at Worcester. The invention spread with enormous rapidity and Spode made his fortune. He died in 1797,* leaving his son Josiah Spode II to carry on his business.

The second Spode married in 1779 the eldest daughter of John Barker, master potter of the Row Houses, Fenton. He had been a dealer in earthenware, glass and china in London. William Copeland, a native of Stoke, had been his traveller and assistant in London. On his father's death young Spode made Copeland his partner and put him in charge of the London office. Even in his father's lifetime Spode had begun decorating their ware with the Japan reds and blues and heavy gilding that was afterwards the distinguishing mark of Spode and Copeland porcelain; and in 1800 they began to make their bone-paste porcelain. †

*"Gent.'s Magazine," 1797, p. 802.

†Shaw, "Staffs. Potteries," p. 216-7; and "Dict. Nat. Biog.": "Spode."

JOSIAH SPODE
1754-1827

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SPODE AND BLUE PRINTING

Porcelain is a transparent vitreous body which fuses on being fired, and does not require any glaze. The early porcelain had been made largely of glass; Cookworthy's porcelain, and that made at Shelton New Hall, relied solely on china clay and china stone from Cornwall. None of these bodies were certain, and they failed to become commercial successes. But when the New Hall Company ceased, the manufacture of their hard-paste porcelain in England ceased too, and an entirely new porcelain body was destined to take its place. It was not until Spode introduced bone into the body that the cheap china we know to-day could be produced.*

The modern soft-paste bone porcelain consists of nearly equal portions of china clay, china stone and bone ash, fired to a temperature of about 1250 C. and then glazed with a feldspar and china-clay glaze and refired.† The chief porcelain factories at this time were at Worcester and Derby, but they were soon outdistanced and beaten by the

* Prof. Church attributes the first manufacture of bone-paste porcelain to the Bow Factory (1749-75). "English Earthenware," p. 82.

† Burton, "Porcelain," p. 19-20.

better conducted factories of Spode, Minton and Davenport, who managed to centre the china trade in North Staffordshire, just as the earthenware trade had been localized there in the previous century.

To modern taste all the china of the first half of the nineteenth century, with its florid colouring and lavish gilding, seems to warrant little success or praise. In their own day however the success of the Spodes was very great. The second Spode died in 1827; William Copeland had died in the previous year, and in 1833 a third Josiah Spode died also. From the executors of the last Spode the whole factory was bought by William Taylor Copeland, M.P., the second of the name, Alderman of the City of London.

Mintons have long been the historic rivals of Copeland, late Spode. Their factories are almost side by side in Stoke, lying along the Newcastle canal, which was cut in 1795. Just across the Trent, too, lay Whieldon's old works at Little Fenton. Wedgwood, in his list of the potters of 1715, says that there were then only two factories in Stoke—Ward's and Poulson's. He meant pro-

HERBERT MINTON
1793-1858

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bably that the factories carried on when he wrote in 1785 by Ward and Poulson were in existence in 1715. However that may be, in 1793 Thomas Minton, financed by a Mr Pownall, joined Joseph Poulson, a practical potter already at work, and began to make "blue-printed" ware at Stoke.* A few years later they began to make porcelain. In 1802 the firm was "Minton, Poulson & Co.," and by 1817 it had become "Thomas Minton & Sons." This first Minton died in 1836, and it was his son, Herbert Minton (1793-1858), that brought the Minton china to its highest perfection, and started the manufacture of encaustic and dust tiles.

A word should be said here on the methods of gilding—so marked a feature of both Spode and Minton china. Originally, when gilding was put on the ware, it was laid on in the form of gold-leaf, and attached with printers' size. This sort of gilding does not usually wear well, and it was only in his very late years that Wedgwood began to burn gold into the ware.† About 1790, the

*"Dict. Nat. Biog.": "Herbert Minton."

†Church, *op. cit.*, p. 85.

method of painting on the gold with mercury, and burnishing it afterwards, was introduced from the Continent, and a new decoration was super-imposed upon the already overladen ware. It is only within the last decade that a form of liquid gold has been discovered which requires no burnishing, and yet is fairly durable.

Another form of decoration in which gold was employed was lustre ware. Mr Burton thinks the application of a gold lustre to Staffordshire pottery was introduced first about 1792 at Etruria, and was used on Wedgwood's "Pearl" dessert ware, made in the form of shells. If this lustre, or silver lustre, is laid on thickly, it converts the earthenware in appearance into gold or silver plate—an inartistic transformation. When, however, the lustre is thinly applied, the glaze of the ware is *stained* to a purplish-pink colour, on which the metallic lustre sparkles like shot silk. The newly discovered metal platinum was used to produce the similar silver lustre, and during the period 1792-1810 many fine pieces were produced by the Wedgwoods (and by, among others,

John Aynsley of Longton), covered with either the gold or silver plating or lustre.*

Other Stoke potters at the end of the eighteenth century were the Booths of Cliff Bank, and Thomas Woolfe. Their factories are both shown on the map of the Potteries in 1802 which is here inserted. Hugh Booth (1732-89)† made a considerable fortune, and was succeeded by his brother and nephews, Ephraim, Hugh and Joseph Booth. Thomas Woolfe (died 1818)‡ contests with the elder Spode§ the credit of being the first to employ steam power in their factories, to drive the flint and glaze mills. Both Aikin and Shaw agree in dating this innovation about 1793. Woolfe's son-in-law, Robert Hamilton, joined the firm for a time, but before 1817 the factories of both Woolfe and the Booths had passed into the hands of William Adams (1772-1829), the successful progenitor of the present potting family of Adams.

* Burton, "English Earthenware," p. 150.
† Ward, "Stoke-on-Trent," 476. ‡ Shaw, *op. cit.*, p. 63.
§ Aikin, "Manchester," p. 522.

CHAPTER IX.

METHODISM AND THE CAPITALISTS.

YET another Staffordshire family founded on "blue-printed" ware is that of Ridgway. Ralph Ridgway was a master-potter at Chell, who failed in business in 1766, and departed with his family to Swansea, where the manufacture of porcelain was just commencing.* His younger son, Job (1759-1813), returned to the Potteries in 1781, and divided his time between acting as a Wesleyan missionary and work as a journeyman potter in Hanley.† There for some time he also manufactured lawn for the sieves used in sifting the clay slip, but this he gave up, on the strange ground that it led to bribery and drunkenness, and returned to his potter's bench. At last, in 1792, he and his brother George started a factory of their own in Shelton, at the bottom of Albion Street, said to have been for-

* H. Wedgwood, "Romance of Staffordshire," 1, 2.

† Wedgwood, *op. cit.*, p. 7.

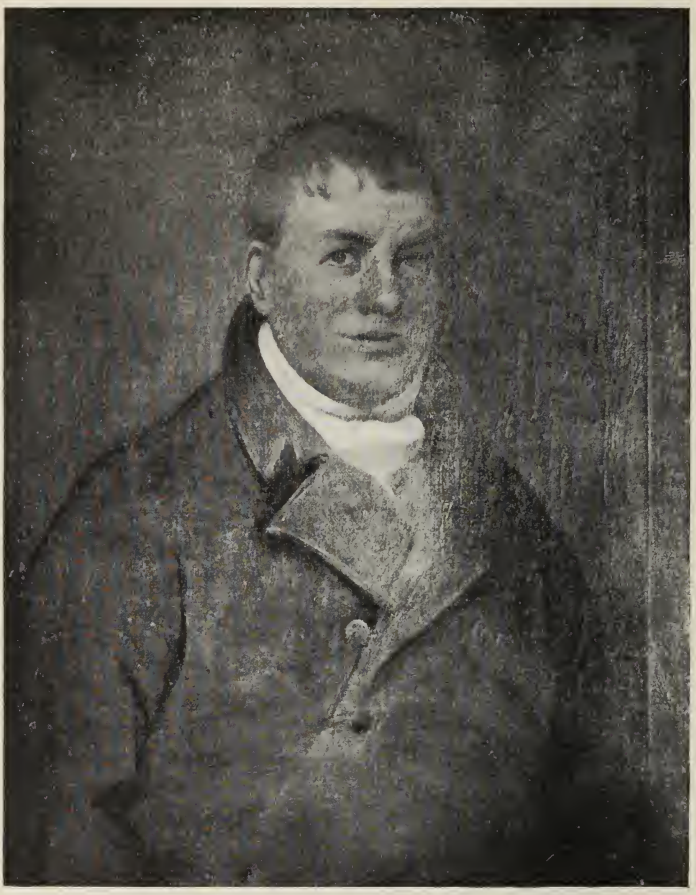

Photo by *H. J. Gover & Co., Hanley*

JOB RIDGWAY
1759-1813

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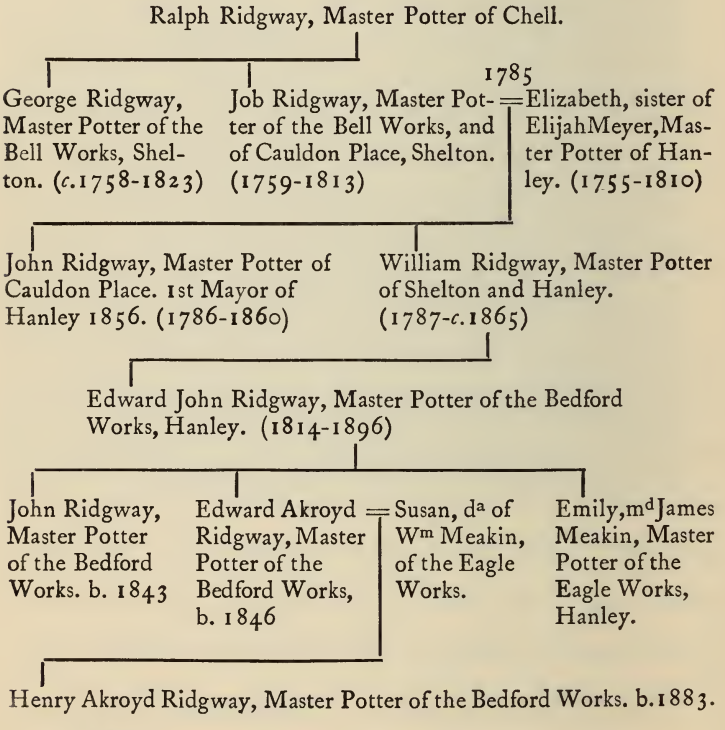
merly that of Warner Edwards.* It has been called the "Bell Works," from the Blue Bell Inn which stood opposite. Of course they made "blue printed," and prospered. In 1802 Job left his brother, and built the well-known house and works at Cauldon Place on the Cauldon canal, now occupied by the porcelain works of Brown, Westhead, Moore & Co.† At Cauldon Place the firm, "Job Ridgway & Sons," began in 1808 to make china. Here, too, Job died in 1813, and was succeeded by his son John Ridgway, under whom the Cauldon Place china achieved so great renown. His other son William went back to the Bell Works, and, adding factory to factory, soon became by far the most important potter in Hanley.

Job Ridgway married the sister of Elijah Meyer, and made the fortune of his family. But his potting was not so interesting as his religious zeal, so typical of the sentiments of the Potteries at this time; and as the Methodist revival of the last quarter of the eighteenth century had a profound effect upon the habits of the pottery people, and permanently changed their affections from cock-

*Wedgwood, *op. cit.*, p. 14. †Wedgwood, *op. cit.*, p. 24.

fighting to psalm singing, it is worth while, even in a history of potting, to mention this side also of the work of Job Ridgway. He was "converted" while working at Leeds in 1781. When he came to his brother's house in Hanley, there were only twenty-five Methodists in Hanley. He formed a congregation and opened their first chapel in 1784. No sooner was Methodism firmly established than he quarrelled with these confining



bonds also, and, in 1797, he did more than any other layman to establish the Methodist New Connexion.* Bethesda Chapel was built in the following year, and by 1802 Burslem and Lane End also had chapels of this new itinerant society. By 1843 there were five chapels of this denomination in Hanley alone. If you worked for Job Ridgway, you had to attend his chapel also.

There are some names of manufacturers on the 1802 map of the Potteries which have not received so far, and yet deserve, special mention. The brothers John and George Rogers, for instance, built their factory at Dale Hall near Burslem about 1780. John Rogers built too, about 1800, the house called "Watlands" in Wolstanton, the home of many potters, and lived there till his death in 1816. His son Spencer Rogers succeeded to the firm, which continued to flourish for over half a century as "John Rogers and Sons."† Mr Samuel Ford now owns these works.

Joseph Machin of Burslem was the progenitor of the Machins of the Hole House Works, afterwards, in 1843, "Machin and Potts" of the

* H. Wedgwood, *op. cit.*, p. 15. † Ward, *op. cit.*, p. 159.

Waterloo Works. This firm were the first successful manufacturers of porcelain in Burslem and they invented too the present method of printing the transfer papers from revolving steel cylinders, thereby greatly accelerating the work of producing these transfers and printing the ware.

The Goodwins of Cobridge had no fewer than four factories in the neighbourhood as late as 1843;* and the firm of John Glass & Sons appears to have existed in Hanley ever since the beginning of the 18th century and the days of slip dishes and "tygs." William Baddeley, with his works at Eastwood on the banks of the Cauldon canal, was chiefly noted for his large flint-grinding mills. Miles Mason, of Lane Delf, and his son Charles J. Mason had their factory where the Stoke and Hanley tram-lines now branch. In 1813 the elder Mason introduced the patent "ironstone" china, which became very popular and was the precursor of the "granite" trade of later days.† The senior partner in the firm of Bourne and Baker of Fenton made a fortune, built the

* Ward, *op. cit.*, p. 286.

† Church, "English Earthenware," p. 97, and Ward, *op. cit.*, p. 552.

church at Fenton, and bought the Hilderstone Hall estate, where his descendants now live.

In Longton the firm of Charles Harvey is notable, since the proprietor became, about 1820, the first banker at the Longton end. Mrs Mary Cyples represents a family of potteresses whose factory is perpetuated in Cyples Lane. Messrs Cheetham and Wooley invented a hard white stone body resembling porcelain, very useful for relief decoration,* and flourished in Commerce Street for more than half a century. The Locketts are one of the few firms which have lasted over a hundred years.

The potting industry, like all others, suffered stagnation during the French wars. Till 1810 however the growing American trade compensated to a certain extent for the loss of the continental market. But in 1810 the Orders in Council stopped both the continental and American trade. These Orders were rescinded in 1812, but the continental trade languished till 1814, and had to be rediscovered and re-established as an entirely new business when peace came.

* Shaw, *op. cit.*, p. 225.

When at last the Continent was reopened to English china and earthenware one particular firm came to the front and took the greater part of the ornamental trade. This was the firm of John Davenport & Sons. John Davenport came of a small yeoman family settled near Leek, and he started in 1785, first as a workman and later as a partner, with Thomas Woolfe of Stoke. In 1794 he commenced making china on his own account at Longport.*

The first factory built on the canal at Longport was, appropriately enough, put up in 1773 by John Brindley, the younger brother of the engineer. Edward Bourne and Robert Williamson followed, and in 1795 Walter Daniel put up a fine house and factory at Newport near by. All these factories became, early in the nineteenth century, the property of the great firm of Davenport, attached to the "Unicorn Bank." John Davenport had built the "Unicorn Bank" in 1794 for the manufacture of china. In 1797 they started the chemical preparation of litharge and white lead; and in 1801 was added the manufacture of flint glass.†

* Sleigh, "Leek," p. 46, 47.
† Ward, "Stoke-on-Trent," pp. 156, 157.

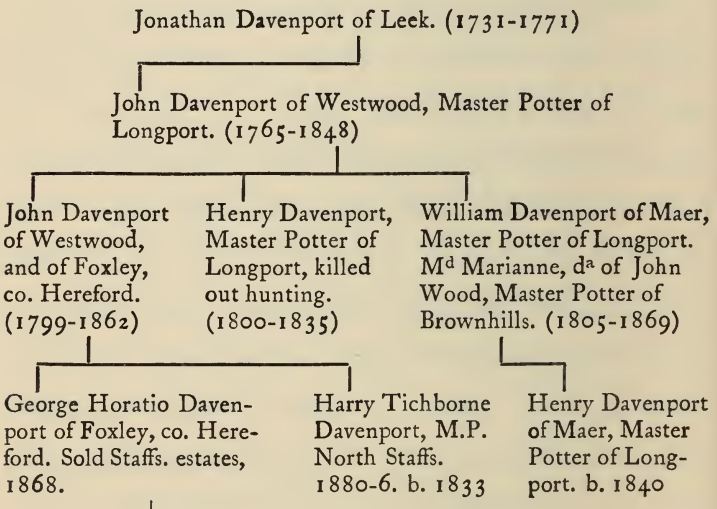
Davenport china and stained glass attained a very high reputation, and for many years the Davenports represented the type of the most successful potters of the age. They are said in 1836 to have produced earthenware and china alone to the value of nearly £100,000 and to have employed 1400 workpeople.* They had branch establishments at London, Liverpool, Hamburg and Lübeck. They enjoyed Royal favour and acquired princely fortunes. The first John Davenport bought Westwood near Cheddleton in 1813. He was a major of volunteers at the time of the French scare in 1803, and Conservative M.P. for Stoke-on-Trent from 1832 to 1841. His sons, John, Henry and William carried on the business and established themselves, John at Foxley, Co. Hereford, and William at Maer. William Davenport was Master of the North Staffordshire Foxhounds. The third generation also went into politics, and Henry T. Davenport, after failing to secure a seat at Newcastle and at Stoke in 1874, became, from 1880-6, member for the northern division of the county. As they lost touch with

* Brongniart "Traité des Arts Ceramiques," vol. II, p. 453.

their works, however, the affairs of the Davenport firm gradually suffered. In 1868 they sold Westwood; in 1885 Maer; and in 1887 the "Unicorn Bank" was closed down and sold to Mr Thomas Hughes, who died in 1901.

The Davenports were the only manufacturers of glass of any importance in North Staffordshire, and no attempt is now made to rival the productions in this line of the southern part of the county.

The success of the Davenports with their china in the continental trade, which began to be marked during the short peace of 1803-4, affected, no doubt seriously, the trade of the Wedgwood firm,



JOSIAH WEDGWOOD II
1769-1843

To face p. 149

which since the first Josiah's death had been carried on nominally by the second Josiah, but actually by Thomas Byerley. It is not surprising, therefore, to find that in 1805 Wedgwoods also commenced the manufacture of porcelain, and to find them repeating on china dinner and tea services the patterns which had been so successful on the Queen's Ware. Josiah Wedgwood II bought Maer in 1803 (where he was succeeded by Davenport), and began again to attend to business. Though the new china and the jasper and black basalt with reliefs in Egyptian red turned out under his regime fully maintained the reputation of the firm—as witness the medallions of the admirals and the Egyptian basalt so typical of the second period*—yet they never recovered the undisputed position they had held in the ornamental trade of the Continent.

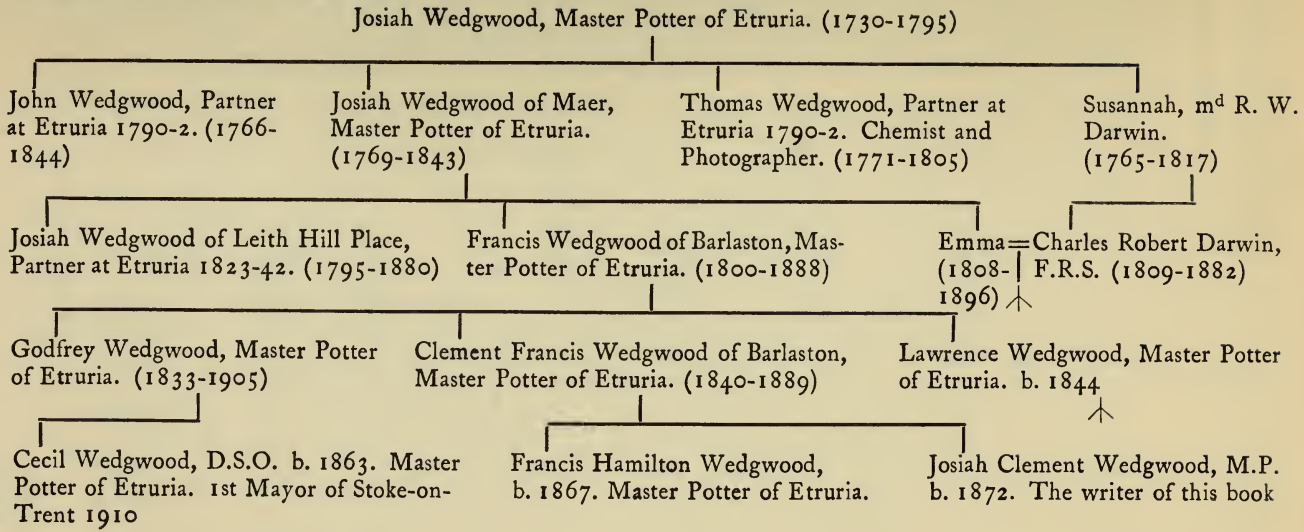
By 1819 or 1820† indeed they ceased to try and compete in the china trade, and it was not till 1872 that Wedgwoods again produced the porcelain for which they are now so famous. In 1828 even their London showrooms were closed down, and Josiah

* Church, "English Earthenware," p. 84. † Wedgwood MS.

Wedgwood II committed the unpardonable vandalism of selling off the stock, patterns, and moulds there stored. The collections in the Mayer Museum at Liverpool and the collection now in the possession of Sir W. H. Lever were formed out of purchases made at this sale. After contesting Newcastle vainly in the interests of "reform" in 1831, Wedgwood was returned as first radical member for Stoke-on-Trent in the reformed Parliament of 1832, and died at Maer in 1843. From 1823 he had had the assistance of his eldest son Josiah, but from 1827 onwards the works were managed almost entirely by his third son, Francis Wedgwood. The firm, which had been called "Josiah Wedgwood" after Byerley's death in 1810 and "Josiah Wedgwood & Son" until 1827, was thenceforth known as "Josiah Wedgwood & Sons," which title it retains at the present day.

The progress of invention and specialization had brought into existence quite a number of manufactures subsidiary to potting, and we will take advantage of a little-known Directory of 1818 to show both the names of potters then in business,

Pedigree of the Later Wedgwoods:



and also the number and nature of these dependent trades.

The Directory for 1818 was compiled by W. Parson and T. Bradshaw, and printed by Leigh of Manchester. The manufactories of earthenware on the list are as follows:

Newcastle.

Sam. Bagshaw, Basford.

Golden-Hill, Tunstall, Red Street.

Ben. Adams, Tunstall (Greengates).
John Boden, Tunstall.
Jesse Breeze, Greenfield.
Ric. Cartledge, Golden Hill.
Jas. Cartledge, Golden Hill.
Child & Clive, Newfield.
Jas. Collinson, Golden Hill.
J. & R. Hall, Tunstall and Burslem.*
T. & J. Knight, Clayhill.
Marsh & Haywood, Brownhills.
John Meir, Tunstall.
T. & H. Moss, Red Street.
Ben. Myatt, Red Street.
Nixon & Whalley, Tunstall.
H. Powis & Co., Sandiford.
W. S. & I. Rathbone, Tunstall.
Daniel Vawdrey, Golden Hill.
Wood & Brittell, Brownhills.

Burslem, Longport, Cobridge.

T. & E. Bathwell, Chapel Bank.
J. & R. Blackwell, Cobridge.
W. Bourne, Bell Works.

* Figure-makers.

Burslem, Longport, Cobridge.—continued

Jos. Bradshaw, Booden Brook (Cobridge)
Philip Brooks & Co., Sitch.
Cartledge & Beech, Knowle.
Ralph & J. Clews, Cobridge.
J. & J. Davenport, Newport.
Frank & N. Dillon, Cobridge.
B. & S. Godwin, Cobridge.
T. & B. Godwin, New Basin.
Goodfellow & Bathwell, Upper House Works.
John & Ralph Hall, Sitch & Tunstall.
John Heath, Sitch.
Henshall & Williamson, Longport.
Thos. Heath, Hadderage
Ephraim Hobson, Cobridge.
Holdcroft & Box, Cobridge.
Anne Holland, Hill Top, Burslem.
Ric. Jarvis, Nile Street, Burslem.
Ralph Johnson, Church St., Burslem.
Jonathan Leak, The Row.
Machin & Baggaley, Low St.
Joseph Machin, Waterloo Road.
Sam. Marsh, Brownhills.
Ric. Massey, Castle St.
S. & T. Massey, Nile St.
John Mellor, near the Market Place.
John Moseley, Cobridge.
John Moseley, Churchyard Works.
Wm. Moseley, Queen St., Black Works.
Oliver & Bourne, Cobridge.
J. & R. Riley, Hill Works.
J. & C. Robinson, Hill Top Works.
John Rogers & Sons, Longport.
Spencer Rogers, Dale Hall.
Wm. Stanley, Knowle Works.
Dan. Steel, St. Johns St.
Ralph Stevenson, Cobridge.
Andrew Stevenson, Cobridge.
Ben. Stubbs, Longport.

Burslem, Longport, Cobridge.—continued

Sam. Tompkinson, Church Street.
Wm. Walsh, Furlong.
John Walton, Hadderage.
James Warburton, Hot Lane.
John Warburton, Hot Lane.
Wedgwood & Johnson, High Street.
Wood & Caldwell, Fountain Place.
Ephraim Wood, Hole House.

Hanley and Shelton.

Wm. Baddely, Eastwood
Joseph Bradshaw, Booden Brook.
W. & G. Brownfield, Keelings Lane.
John Glass & Sons, Market St.
Hackwood, Dimmock & Co., Hanley.
Hicks & Meigh, Shelton.
J. J. & R. Hollins, Upper Hanley.
Hollings & Co., Brook St., Shelton.
Reuben Johnson, Miles Bank.
Jas. Keeling, New Street, Hanley.
Mansfield, Pawley & Co., Market Place.
Mare, Matthew & Co., Vale Pleasant.
Elijah Mayer & Son, High St.
Job Meigh & Son, Hill St., Hanley.
Thos. Morris, Marsh St.
Fred. Peover, High St.
John & Wm. Ridgway, Shelton (Bell Bank).
Rivers & Clews, Shelton.
John Shorthouse, Tontine St.
T. & J. Taylor, High St.
Exors of Chas. Whitehead, Shelton.
D. Wilson & Sons (assignees of), High St.
John Yates, Broad St., Shelton.

Stoke and Etruria.

Wm. Adams, Stoke.
Robt. Hamilton, Stoke.
T. Minton & Sons, Stoke.

Stoke and Etruria.—continued

Poulson & Dale, Stoke.
Josiah Spode, Stoke.
Ward & Co., Stoke.
Josiah Wedgwood, Etruria.
Thos. Wolf, Stoke.

Lane End, etc.

Thos. Baggaley, Lane Delf.
R. J. & J. Barker, Flint St.
Batkin & Deakin, Waterloo, Flint St.
Beardmore & Carr, Lane End.
J. & T. Booth, Lane End.
Bourne, Baker & Bourne, Fenton.
Chas. Bourne, Foley.
Joseph Burrow, Foley Works.
Maria Bridgwood, Market St.
Kitty Bridgwood & Son, Market St.
Thos. Brough, Green Dock.
Carey & Son, Lane End.
M. Cheetham & Son, Commerce St.
Lydia Cyples, Market St.
T. Drury & Son, Daisy Bank.
Hugh Ford, Green Dock.
Geo. Forrester, Market Place.
Robt. Garner, Lane End.
S. Ginder & Co., Lane Delf.
Harley & Seckerson, Lane End.
Chas. Harvey & Sons, Gt. Chas. St.
John Hewitt & Son, Green Dock.
Hilditch & Martin, Lane End.
Thos. Hughes, Lane Delf.
John Lockett & Co., King St.
W. & J. Lowe, Church St.
Jacob Marsh, Lane Delf.
Wm. Mason, Lane Delf.
Geo. & Chas. Mason, Lane Delf.
Mathers & Ball, Lane End.
Mayor and Newbold, Market Place.

Lane End, etc.—continued

Ben. & Jos. Myatt, Lane End.
Wm. Nutt, Flint St.
Jas. Pattison, High St.
Wm. Poulson, Chancery Lane.
F. & R. Pratt, Fenton.
John Pratt, Lane Delf.
John Robinson, High St.
John Robinson, George St.
Shelley, Booth & Co., Lane End.
J. H. Sheridan, Union Market Place.
Simkin & Waller, Lane End.
Thos. Stirrup, Flint St.
John Unett, High St.
H. & R. Walklate, High St.
Geo. Weston, High St.

The trades of that day dependent on potting were: Makers of the crates wherein to pack the ware; gilders; cobalt-refiners and colour-makers, of whom Machin and Bagguley of the new "Waterloo" Road were perhaps the most important; enamellers; engravers of designs on copper, from which the transfer prints for the under-glaze blue printing were made; flint-grinders; lead and litharge makers for the glaze; saggar makers; lathe makers and lawn manufacturers.

The lawn manufacturers made the lawn sieve through which the clay body in the slip state was passed in order to remove all coarse particles. Indeed the preparation of the clay body was now

carried out so carefully that magnets were used to attract any particle of iron that might be ground up with the flint; and the old process of evaporation which converted the slip into the solid clay body gave way about 1860 to the clay press now used to squeeze out the water from the clay. Samuel Allen, lathe maker of Dale Hall, is the sole representative to be found in 1818 of the makers of potters' machinery, now so important a branch of manufacture. But the "jiggers," which exactly reproduce plates by the thousand, and the "jollies," for the mechanical moulding and pressing of hollow ware, were the creation of a much later age. Even now these machine tools may be said to be in their infancy though they are developing under the hands of skilled engineers such as Messrs Boulton of Burslem.

A subsidiary manufacture which does not appear on the 1818 list at all is that of borax. Borax, or as it was originally called "tincal," had been first introduced about 1796 when it was brought from Thibet. In that year Ralph Wedgwood (see p. 87), who spent his life inventing things, and was then a master-potter at Ferrybridge in York-

shire,* took out a patent for "making glass upon new principles" by using this tincal. By Hickling's patent of 1799 it was also applied to the enamelling of metal vessels, and it appears again in the leadless glaze of Mr. Rose of Coalport in 1820.† All this time, however, the price was almost prohibitive of the commercial use of borax. In 1815 it cost 3s. to 4s. a lb, and it was only on the development of the Etruscan borax deposits in 1828 that it came into general use as a flux for the glazes, partially displacing the lead oxides. As the borax—as well as the soda used in the glaze—is soluble in water, glazes containing these have to be "fritted" or vitrified before being ground with the other components into a slip for dipping the ware. This melting or fritting, besides making the glaze insoluble in water and suitable for dipping, will, if the lead be fritted with the other components and not just ground in afterwards, make the lead more or less innocuous. Unfortunately, however, the fritted lead requires more exact firing to produce a good glaze, and can hardly compete

* Burton, "English Earthenware," p. 176.

† Furnival, "Leadless Decorative Tiles," p. 361.

commercially at present. Glazes can be made without any lead at all by using borax alone as a flux, but the surface is always full of imperfections and less glossy than that given by a leaded glaze.

The first important manufactory of borax in the Potteries was that of Wood, Kuntz & Co.,* a firm in which the sons of Enoch Wood were interested. Because the risk of lead poisoning is always present in the preparation and uses of the lead glazes, attempts have been made for 100 years to produce a good glaze free from lead—or rather free from unfritted lead—soluble in hydrochloric acid. Josiah Wedgwood produced such a glaze, but it gave a rough surface wherewith it was useless in those days to try to compete. The Society of Arts awarded its gold medal in 1823 to Job Meigh of Hanley for his invention of a leadless glaze. But Meigh's leadless glaze was only to be applied to coarse red pottery.† Of recent years Mr. Furnival and Mr. William Burton have done most to make safe glazes commercially practicable. There is no doubt but that by the use of borax a

* Ward, "Stoke-on-Trent," p. 266.

† Shaw, *op. cit.*, p. 235-6.

safe glaze, free from lead, can be made; it will not be mechanically perfect perhaps, but artistically it need not be considered inferior to the heavy smooth lead glaze.

About 1826 an even more dangerous lead process was introduced by Henry Daniel, who began in that year to make stoneware "china" in Shelton. This was the process of "ground laying" and "colour dusting," in which the enamel paints are dusted in a dry state over a sticky oily surface to which they adhere. The leaded particles of paint dust are easily breathed into the lungs and caused a heavy mortality. The ærograph, invented in 1890, which lays the ground mechanically, reduced the risks of this process, and more recently the Home Office regulations regarding ventilation, mufflers, etc., have helped in the same direction.

Among the Tunstall potters on the list of 1818 occur the names of Benjamin Adams and Jesse Breeze. Benjamin Adams was the son and successor of that William Adams who made jasper at Greengates and died in 1805. Within a year or two of 1818 he had to sell his factory, which was bought

by John Meir, another Tunstall potter.* John Breeze had bought the house and factory built by Theophilus Smith in 1793 and called Smithfield. Smith had, in 1800, committed suicide in prison after failing three times to murder his wife's lover.† His tragic end caused the name of his house to be changed to Greenfield; and in 1827 Jesse, son of this John Breeze of Greenfield, having no sons, married one of his daughters to William Adams, son of the successful potter of Stoke, and bequeathed his factory to him. In this way another branch of the Adams family returned to Tunstall. From 1827 to the present day the Adams family from father to son have continued to make earthenware at Greenfield. They have recently bought up Greengates also, and joined the two old Adams' factories together. The firm has had a somewhat chequered career, but under the management of the present brothers and partners, William and Percy W. L. Adams, it has resumed its high reputation as one of the largest exporters of useful and ornamental ware.

* Ward, "Stoke-on-Trent," p. 103.

† H. Wedgwood, "Romance of Staffordshire," 1, p. 9.

William Adams (brother of Thomas Adams, Master Potter of the Brickhouse, Burslem), Master Potter of Burslem. d. 1617.

John Adams of Sneyd Green. Will proved 1641.

William Adams of Sneyd Green. Will proved 1677.

William Adams of Bank H°, Bagnal. Said to have been a salt-glaze potter. Will proved 1712.

Edward Adams of Sneyd Green and Bagnal. Will proved 1728.

William Adams of Bank H°, Bagnal. (1702-1775)

Edward Adams (1709-1745)

John Breeze, Master Potter of Greenfield.

Richard Adams, Master Potter. (1739-1811)

William Adams, Master Potter of Greengates, Tunstall. (1745-1805)

Jesse Breeze, Master Potter of Green-field.

1793

Sarah, dau. of Lewis Heath, Master Potter of the Hadderage. = William Adams, Master Potter of Stoke-on-Trent. (1772-1829)

Benjamin Adams, Master Potter of Greengates.

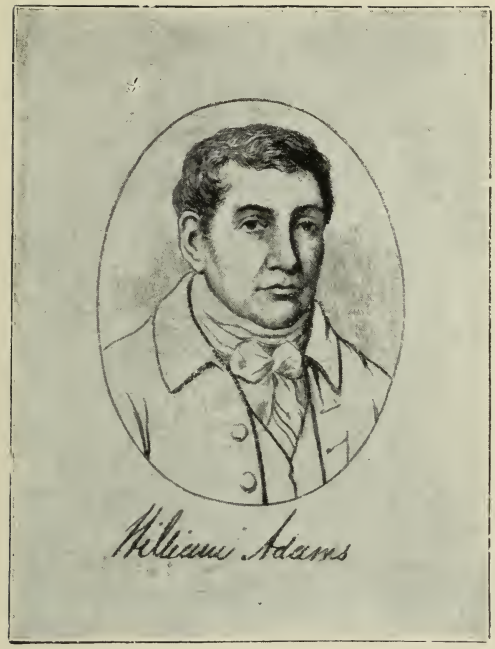
1827

Jane (1804-1864) = William Adams, Master Potter of Greenfield. (1798-1865)

William Adams, Master Potter of Greenfield and Greengates, (1833-1905)

William Adams. Percy W. L. Adams.

Master Potters of Greenfields and Greengates, Tunstall.



WILLIAM ADAMS
1772-1829

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CHAPTER X.

STEAM POWER AND STRIKES.

AS the nineteenth century advanced, steam power gradually replaced hand and water power on the pot-banks. Before 1800, steam had been introduced to drive the flint mills; the glaze-grinding mills, the pumps and lawn sifters came next. But lathes and throwers' wheels were still driven by hand, and so were the "jiggers"—revolving moulds on which flat bats of clay were "flat-pressed" to make plates and saucers. A tramway was laid about 1815 from Longton and Fenton to the canal wharf at Stoke; but transport along both tramway and canal was still drawn by horses. With the opening of the Manchester and Liverpool Railway, however, in 1830, a new era began in transport, as important as the first canal for the potting industry.

Land transport had, of course, become thoroughly organized and cheapened, and coaches, carrier carts and wagon transport had kept

increasing in speed and numbers. In the 1818 Directory, for instance, we find that no less than eleven coaches passed through the district each way every day. Every afternoon the "Light Post Coach," from Liverpool to Burton and London, ran through the Potteries from the "Red Bull" at Lawton to Lane End; and two hours later the "Prince Coburg" from Liverpool passed through, branching off from the other route at Stoke, and going through Trent Vale, Stone and Lichfield to London. The "Regulator" too, on three days of the week, ran through the Potteries by the same route on its journey from Liverpool to Birmingham. In addition to these coaches three others ran from Liverpool to London, and one from Manchester to London, passing through Newcastle, as did also one from Liverpool and two from Manchester on their way to Birmingham. You could travel from Newcastle at 6 a.m. to the "Swan with Two Necks," in Fetter Lane, in fifteen hours.

In 1833, however, the Bill for the Grand Junction Railway, from Birmingham to Manchester, was passed, and by the completion of

this railway in 1837, Whitmore, the nearest station, five miles from the Potteries, was brought within seven hours of London by four trains a day.

Coal gas had been introduced in 1826 into Burslem, and by 1840 the beginnings of a water supply were visible. At this period, just before modern sanitation, locomotion, economies and "civilization" took root, John Ward, in his "Stoke-on-Trent," gives us a table showing the dimensions of the trade. It runs as follows: *

A Table, showing the amount of conveyance of Goods and Merchandise to and from the Boro' of Stoke-upon-Trent, by the navigation from the Trent to the Mersey, for one year ending 30th June 1836.

INWARD TRADE.—*From Liverpool*

	Tons	
Clay and Stone from Devon, Dorset and Cornwall	70,000	
Flint Stone from Gravesend and Newhaven	30,000	
Borax, Boracic Acid, Cobalt, Colours, Bone Ash, etc.	4,000	
Timber	9,000	
Corn, Grain and Flour	7,000	
Groceries and Colonial Produce	6,500	
Butter, Bacon and other provisions	1,500	
Wine, Spirits, Ale and Porter	800	
Miscellaneous Goods	1,000	
		129,800

* Ward, "Stoke-on-Trent," p. 389.

From South Staffordshire		
Iron, Steel and Copper	7,060	
Stourbridge Bricks	1,200	
		8,260
From London		
Mercery, Haberdashery, from London and the West	500	
Groceries, &c.	1,500	
Miscellaneous	1,050	
		3,050
From Manchester		
Cotton, Silk and Woollen Goods	1,200	
Window Glass and Lead	300	
Malt, &c.	500	
Miscellaneous Goods from the North	500	
		2,500
Total Imports		143,610

OUTWARD TRADE.—*To Liverpool*

Earthenware and China, for America, Ireland, Scotland and foreign Countries	51,000	
Bricks and Tiles for same countries	10,000	
		61,000
To Manchester		
Earthenware and China	3,500	
Bricks and Tiles	30,000	
Coal, to Manchester and Stockport	25,000	
Miscellaneous Goods	1,000	
		59,500
To South Staffordshire		
Ironstone	15,000	
		15,000

To Birmingham and the West		
Earthenware and China	6,000	
		6,000
To London and the South		
Earthenware and China	12,000	
Coals, Cannel and Slack	30,000	
		42,000
To Chester and North Wales		
Earthenware and China		1,000
Total Exports		184,500

It will be noticed that the Stourbridge bricks were already in request for the pot-ovens, and that the total weight of ware exported out of the district amounted to 72,500 tons, of which nearly three-quarters went abroad. Through the courtesy of Mr Philips, Manager of the N. S. Ry. Co., I am able to give some corresponding figures for later dates, as follows:

By Canal, '000 tons	By Railway '000 tons	Total Ware Exported from District	Year
44	?	?	1862
66	?	?	1872
64	?	?	1882
52	81	132	1884
58	80	137	1886
67	82	149	1888
57	93	150	1890
56	98	154	1892
50	97	147	1894

By Canal, '000 tons	By Railway '000 tons	Total Ware Exported from District	Year
56	109	165	1896
42	118	160	1898
45	119	164	1900
42	120	162	1901
36	123	160	1902
44	129	173	1903
47	127	174	1904
42	129	172	1905
48	135	184	1906

This shows an export trade from the North Staffordshire Potteries of 184,000 tons of ware in 1906 against 72,500 tons exported in 1836, but it must be remembered that ware is now much finer and lighter than it was seventy years ago, so that the real increase in value is more marked than the increase in weight seems to indicate.

As trade and population increased within the narrow limits of the Potteries the conditions of life became harder and poverty more severe. Already in 1792 we read of troops being sent, to Wolverhampton of all places, to keep order during a strike in the Potteries of Staffordshire.* While in 1813 a Chamber of Commerce was formed and attempted to fix a uniform increased price for

* London "Star" Nov. 26, 1792.

earthenware. A price list was in fact drawn up for the commoner sorts of ware, and remained in force for twenty years or more, though it was regularly evaded by special rebates and discounts.*

The first Trade Union is heard of in 1824. It was formed immediately on the passage of the combination laws, and the men struck for a rise at Martinmas 1825. The men were utterly beaten and their union destroyed. Little capital was required to start a pot-factory in those days, and the strikers tried to employ themselves in an early example of a co-operative factory. They were however before their time and the experiment only hastened their defeat.†

The best days for the Trade Unions came in 1833, when Robert Owen, the socialist, visited the Potteries and brought them all the enthusiasm of a great cause. A new union was founded, and was welcomed by many of the best employers as a lever to raise prices as well as wages. Chas. J. Mason, who was then supplying the world with his "ironstone" china, formed a Masters' Association to

* Ward, "Stoke-on-Trent," pp. 66-67.

† Harold Owen, "Staffordshire Potter," p. 16.

work with the men's union; and wages were raised. The dissentient masters refused to grant the rise, and a four months' strike began at Martinmas 1834, and ended in a victory for the men.*

During the years 1833-5 wages are said to have increased by 25 per cent.† But in March 1836 the masters united in a Pottery Chamber of Commerce and preparations were made for war. Before however an account is given of what is still known as "the great strike," the two customs of the trade must be described, against which, then and for years thereafter, the men struggled in vain.

By the "Annual Hiring" Agreement men were engaged only at Martinmas (Nov. 11). They were bound to serve all the following year to make ware at fixed prices, and if they broke their agreement they could be, and were, imprisoned. It was entirely a one-sided bargain. An employer could keep a man tied to a situation which gave him but one day's work a week, yet if the man left he might be prosecuted. Even if not prosecuted, nobody could engage him without a written discharge. The

* Harold Owen, "Staffordshire Potter," p. 19.

† Harold Owen, *op. cit.*, p. 26.

system was similar to the Native Pass Laws of South Africa.

The greatest number of male workers were flat or hollow-ware pressers and throwers. These men were paid by piece, and only for those pieces which were good. By a strange trade custom, however, they were not paid for those pieces which left their hands in good condition, but only for those that ultimately came good from the oven. In other words, they suffered for other people's breakages and carelessness. The men could get no proof that the ware was bad at all. They had no appeal. Some masters were even said to refuse to pay for what they themselves afterwards sold as "seconds."

Against these customs the men decided to strike. They demanded the right to give a month's notice to leave and to be paid for all ware which came "good-from-hand." The masters replied that they "could not allow the old usages of the trade to be broken up," and they drew up a new clause to be added to the annual agreements in future. By this new clause the agreement was to be suspended if work at a factory ceased, but only till work was

resumed again. In fact the men were to be suspended from work and wages but not from servitude. If they found work during the "suspension" they were to throw it up as soon as their old master wanted them back.*

As soon as notice of the new agreement was given to the men, the workmen at fourteen factories came out. This was on Sept. 1, 1836. When Martinmas came round sixty-four more of the biggest factories were laid idle, and seven-ninths of the trade stopped. It is doubtful whether the whole history of Trade Unionism records a more desperate fight than the one that followed. Strike pay never exceeded 6s. for married men and 4s. for single men, but the funds became exhausted. Help came—£7,000 of it—from Sheffield and Manchester, and that too vanished. Twenty thousand potters were out of work, and so were the retail tradesmen and all allied trades. The men began to dribble back at Christmas, for it was a very hard winter and the savings were all gone. Then several hundred devoted men, taking the remains of their clothes and household furniture,

* Harold Owen, *op. cit.*, p. 34.

marched in procession to the pawn-shops and paid over all the money they could raise into the common fund. This example inspired the last 10,000 to hold out three weeks longer, and at least got terms for the men. A conference was presided over by Mr Twemlow of Betley on January 20, 1837, and the masters agreed to guarantee four days' work a week, and to break in the presence of the man all ware for which they refused to pay him, on the ground that it came "bad from oven." *

But even these concessions were futile for the union was broken. The men took what they could get. Gradually all the old wrongs crept back again into the trade customs, and even the wage-prices of 1833-6 were whittled away by a system of "allowances." A potter of 1843 gives an account of his engagement. He applied for work as a journeyman, and was asked what kind of a journeyman he wanted to be, as there were several kinds. "There were," said the manufacturer, "some, like those of so-and-so, who took pay in provisions; others, like those of such a one, who took their

* Harold Owen, *op. cit.*, p. 43.

pay in haberdashery and jewellery; but the class to which he wished to direct particular attention was the one which allowed 2d. in the shilling, which class was divided into two parties; those who consented to the twopences being stopped out of their wages on Saturday evening, and those who preferred to compound with their dignity, get their money in full on Saturday and pay back the twopences on Monday morning."*

Wages in fact sank to subsistence level, and the smaller the master the more he beat down his men by allowances and undercut his selling prices. Some of them kept shops as well as factories, and broke the Truck Act every day. The Chamber of Commerce in 1836 stated the average wages as follows: In 1833-4, men 17s. to 21s., women 6s. to 11s., child of 14, 3s. to 3s. 6d.; in 1836, men 21s. to 28s., women 10s. to 15s., child 3s. 6d. to 4s. 6d. These figures probably exaggerate slightly the rise in wages, and under the allowance system they soon sank again to the pre-union level.

The general election took place in the middle of the black year 1837, and the return of the two

*Owen, *op. cit.*, p. 57.

Conservative masters, Davenport and Copeland, for Stoke-on-Trent, resulted in rioting on the part of the wage-earners who were then non-voters. These riots were repeated in a more serious form at the election of 1841, but it was the houses rather than the factories of the unpopular side that were demolished.

During those busy years of the railway boom, the Trade Unions again raised their head in North Staffordshire. The third union was started in September 1843. It began with a small success—a partial strike lasting nine months—but as a rule it avoided conflicts and tried to work by moral suasion and public opinion. With this end in view they published a paper, "The Potters' Examiner," in which the more flagrant cases of "truck" and "allowance" were exposed. They succeeded in gradually levelling up the bad masters. A few prosecutions stopped the truck system, and allowances vanished in 1844 under gentle pressure from a strong union and doubts as to their legality. It is only fair to say that the best firms had never countenanced the "allowances," and were glad to see the worse makers forced to drop them.

A development, however, that helped the union at first more than anything else, was the invention of pot-making machines. The potting industry had survived so long without machinery, that the workmen had begun to think themselves safe. These flat and hollow ware-pressers had skill, and they were paid by the piece. At one fell swoop, and in the middle of their settled lives, they saw themselves suddenly deprived of all the value of their skill and training, and likely to be replaced by women and lads. During 1845-6 Mr Ridgway tried a "paste-box" machine, and Chas. J. Mason bought some sort of a plate "jolly"* The men promptly struck and prevented their adoption, but the panic was intensified when Messrs Copeland introduced a similar dread machine, which the potters in their terror called the "Scourge." This machine too was withdrawn, but not because of the union. The general election of 1847 was approaching and Alderman Copeland stood for Stoke-on-Trent. It is curious to think that the panic fear of the workers postponed the introduction of these machines for twenty years. And indeed the

* Harold Owen, *op. cit.*, p. 64-6.

pottery workers themselves have lost something through the introduction of machinery. The proportion of women and young persons employed in the industry is double what it was in 1850, and the work of married women is not good for the rest of the people.

Incidentally this machinery panic broke down the union. Encouraged by William Evans, their leader and the editor of the "Examiner," the union attempted to emigrate the unemployed—almost to emigrate *en masse* and fly from the wrath to come. They bought a great estate in Wisconsin, called it Pottersville, and to it in 1846 they sent out settlers as to a new Utopia. The scheme failed, and with it, in 1849, collapsed the third potters' union. Drained of money for America, it had been growing weaker ever since 1847—they could only humbly petition against Copeland's "Scourge," and as the union weakened "allowances" crept back into use, while "good-from-oven" and the annual hiring flourished as before.*

It is said that but for the opposition of the Newcastle innkeepers the main line of the London and

*Owen, *op. cit.*, p. 98.

Manchester Railway would have run up the Trent valley, and Newcastle would now occupy the position of Crewe as a universal junction. However that may be, in 1846 a company was formed for giving the potteries direct railway communication with the main trunk lines. The moving spirit in this enterprise was Alderman Copeland, M.P. for Stoke, and senior partner in Messrs Copeland and Garrett—the pottery firm that had once been Spode's.

William Taylor Copeland (1797-1868),* son of William Copeland, the partner of the second Spode, had become sole owner of the old Spode china factory at Stoke in 1833. He had been Lord Mayor of London in 1835, and from 1837 till 1865 he was generally Conservative member for Stoke-on-Trent. With the help of his partner, Thomas Garrett, Lord Ingestre, Richard Cobden, and some London financiers, the North Staffordshire Railway was formed. Bills were passed through Parliament in 1846, and by the end of 1849 Stoke was connected up with Stafford, Derby, Crewe, and Manchester. They were forced by Parliament to

* Dict. Nat. Biog.: "W. T. Copeland."

ALD. W. T. COPELAND, M.P.
1797-1868

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buy out the Canal Company's monopoly at a very high figure—£1,700,000—which large addition to the capital of the company has always been urged as an excuse for any exceptionally high transport rates on this railway.

We may add here that the loop line through Tunstall was finished in 1875; while the tramways with horse draft were commenced in 1861, turned into steam traction in 1895, and into the present electric system by the British Electric Traction Company in 1902.

The railway at first affected principally the passenger traffic, and it was only gradually that it came into use for the carrying trade of the district, as the following figures show:

	Canal	Rail	Year
Total weight of goods	1370	—	1819
and minerals carried	1286	—	1840
by N.S.R. in 1,000	1356	—	1849
tons	1259	273	1850
	1595	1245	1860
	1563	2324	1870
	1244	3369	1880
	1076	4309	1890
	1168	5587	1900
	1130	6515	1906*

* *Ex information* W. D. Phillips, Genl. Manager N.S.R.

The partnership between Copeland and Garrett was dissolved in 1847, and the firm took the title of "W. T. Copeland, late Spode." This was again changed in 1867 when Alderman Copeland's four sons were admitted into the business, and the name became "W. T. Copeland & Sons." It was about 1846 that Messrs Copeland developed the "Parian" body, a hard white stoneware second only to marble as a material for statuettes and bas-reliefs. It is composed largely of feldspar, and figures in this material, modelled by some of the best artists of the last half century, still form a large part of Messrs Copeland's productions.

Alderman Copeland, who was also a great patron of the Turf, died in 1868 and his son, Richard Pirie Copeland, then became sole owner of the works. Mr R. P. Copeland bought Kibblestone Hall, and served as High Sheriff for the county in 1902. His sons have now joined him in the management of the historic works at Stoke.

CHAPTER XI.

MINTON, TILES AND PORCELAIN.

WHILE the Copelands have continued to perfect the old Spode china, their rivals, Mintons, have tried several new fields — tiles, majolica, pâte-sur-pâte. Herbert Minton (1793-1858)* and an elder brother joined their father's firm in 1817, and, after his father and brother retired, he took Robert Boyle as a partner in these works at Stoke. Here in 1828 Herbert Minton first turned his attention towards producing tiles.† In 1830 Samuel Wright of Shelton patented a process for making encaustic tiles in the manner of the old Cistercian monks. The patterns were pressed in hollows into the tiles, the hollows were filled up with different coloured slip clays, and then the face was all cut level and flush. This patent was bought up by Minton and Boyle, and after great difficulties the first successful encaustic tiles were made in 1836.‡

* "Dict. Nat. Biog.": "Herbert Minton."

† L. Jewitt, "Ceramics," II, 195. ‡ Jewitt, *op. cit.*, II, 195-8.

But it was the patent of Richard Prosser of Birmingham in 1840 which gave us the tile industry of the present day. He compressed clay dust between metal dies, and made the dry dust solid under the pressure of a differential screw. The process was intended at first for making buttons, door-knobs, etc., and it was for these purposes that Minton immediately bought the patent. J. M. Blashfield, who had already had experience in making mosaic pavements, saw the value of the machine for making tiles, and developed this line so effectively that by 1842 no less than sixty-two presses were at work making white glazed dust tiles.* Herbert Minton took his wife's nephew, Michael Daintry Hollins, into partnership in 1841 to look after the tile branch.†

Tiles—dust and encaustic—were the first of Minton's improvements. The next change, due in some degree at least to Minton, was a general improvement in taste. The financial success of common blue printed ware had done away with

* Jewitt, "Ceramics," II, 202.

† Report of Trial, "Hollins *v.* Campbell," 1871.

any inducement to improve ornamental ware. The brilliant natural art of Whieldon had been forgotten; the classic style of Wedgwood fell out of favour under the Regency; and instead we find the gaudy decoration of old shapes by artists ever more mechanical and less artistic. As M. Solon has said: "Worse and worse became the shapes and models; lower and lower sank the work of the decorators; nor could this deplorable state of things be altered by the inspiring study of fine works of art. The Potteries were situated very far from the artistic centre; good examples and good advice were equally wanting. It is not to be denied that all that remains of the most pretentious examples of the pottery of that period (1800-1850) bears the stamp of an unmitigated bad taste."* Some second-rate china painter from Worcester or Derby came over to the Potteries to direct workmen and was called an artist. The modest cream colour was embossed and gilded; the white earthenware was entirely covered with badly engraved blue printing; and the porcelain pieces of importance were decorated in the manner which

* M. L. Solon, Pamphlet "A Century of Potting."

one now associates with the mantelpiece of the cheap lodging house.

Gradually this has been changed. The exhibitions of 1849 in Birmingham, of 1851, 1862, and 1871 in London, and of 1867 in Paris, induced healthy competition in excellence as an alternative to competition in cheapness and wage cutting. The public museums of Hanley, Stoke and Tunstall came later, but the Museum of Practical Geology, opened in 1851, and the South Kensington, Museum opened in 1857, helped to raise taste. Above all the Wedgwood Institute at Burslem, opened in 1865 under the fostering care of Thos. Hulme and William Woodall, M.P., with its admirable classes for students in applied art, has given a certain artistic training to the designer, decorator and moulder. But much credit also must be given to Herbert Minton for bringing over to Staffordshire the first of a series of French artists who have added extraordinarily to the ornamental value of Staffordshire ware.

M. Leon Arnoux (1816-1902) was engaged in 1849 by Messrs Minton, and became thenceforth the art manager of the works. He improved the

decoration of their porcelain and the whiteness of its body, but his chief claim to notice rests on his "majolica" and his imitation of the old Pallissy, or Henri II, ware. For 30 years nothing was more popular than Minton's majolica, whether for ornamental ware, tiles or façades. Arnoux was followed by such artists as Jeanest, Lessore, Protat,* and in 1870 by Mons. M. L. Solon, whose special work—pâte-sur-pâte decoration—still holds the public taste and deserves to become classical. In this process white slip clay-paste is painted on to a dark clay body, and the varying thickness and transparency of the layers of paint produce an effect which differs completely from either plain enamelling or the high relief of jasper. At the same time it lends itself to the individual taste of the artist and can never become merely mechanical.

When Herbert Minton died in 1858 his firm employed 1500 workpeople,† a number which has never been exceeded by any ornamental factory before or since. His two nephews, M. D. Hollins and Colin Minton Campbell (1827-1885)—

* M. L. Solon, Pamphlet "Leon Arnoux."

† "Dict. Nat. Biog.": "H. Minton."

the latter had become a partner in 1849—carried on the business jointly under the title of Herbert Minton & Co. for china and earthenware, and Minton, Hollins & Co. for tiles. In 1863 they were joined for a few years by another partner, Robert Minton Taylor, and on his leaving in 1868 Hollins and Campbell divided the business between them. Hollins took the tiles, and Campbell the main factory. One of the conditions of the division was that Campbell had to take over the stock of moulds at a valuation. It is said that they were valued at the unexpected and extraordinary figure of £30,000, the compulsory payment of which dissolved the friendship as well as the partnership of the two cousins. It may have been the recollection of this heavy grievance that induced Campbell in 1871 to start the Campbell Tile Co., a serious competitor for Minton, Hollins & Co., and the progenitor of many lawsuits.

Colin Minton Campbell was High Sheriff of Staffordshire in 1869, Chairmain of the North Stafford Railway, and Conservative Member of Parliament for North Staffs 1874-80. He died in 1885, and his statue stands in the High Street of

Stoke. The Minton Works are now the property of his son John Campbell of Woodseat, but he takes no share in the business, which is managed by Mr J. Robinson. Another John Campbell owns and manages the Campbell Tile Co. in Stoke.

As for the rival nephew and potter, Michael Hollins, he built in 1870 the modern factory of Minton, Hollins & Co. in Shelton Old Road, Stoke, and continued till his death in 1898 to make the best encaustic and glazed dust tiles. The factory, employing some 400 workers, is now carried on, but under far keener competition, by his grandson, Michael Daintry Hollins.

Another important tile factory is that of T. & R. Boote in Burslem. This firm was founded in 1842 by Thomas Latham Boote and Richard Boote at the "Central Pottery" in Burslem. About 1850 they bought several old pot-banks, put up their present "Waterloo Potteries" in Waterloo Road, and started to make tiles. Mr T. L. Boote retired in 1879, Mr. R. Boote died in 1891, and the works are now carried on by the sons of the former, Richard L. and Charles E. Boote. *

* Furnival, "Leadless Decorative Tiles," p. 126.

The British manufacture of tiles is not so entirely localized in North Staffordshire as is that of china and earthenware, but 6 out of the 17 largest English firms have their works here. Such are, beside those already mentioned, G. Woolliscroft and Sons and the Porcelain Tile Co., both of Hanley, Henry Richards Tile Co., of Tunstall, and the Malkin Tile Co. of Burslem.*

* Furnival, "Leadless Decorative Tiles," p. 203.

CHAPTER XII.

MODERN MEN AND METHODS.

BUT the manufacture of tiles, though economically the most important part of Minton's work, ought not to distract attention from that great artistic development of his school, which gave us from 1855-1885 the halcyon days of the English china trade. With this period the names of Minton, Ridgway, Brown Westhead and Brownfield are chiefly associated, while such old firms as Copelands and Wedgwoods acquired fresh lustre.

John Ridgway of Cauldon Place is reputed to have produced the best china at the 1851 exhibition, and when he died in 1860 the Cauldon Place Works were bought by Messrs T. C. Brown Westhead, Moore and Co., who have continued to this day to produce the china for which Cauldon Place has always been renowned. William Ridgway, the brother of John, had half a dozen factories in Hanley—George Taylor's, Elijah

Mayer's, Toft and May's, D. Wilson's, Hicks', Meigh and Johnson's, besides the old Bell Works, and made both earthenware and china.* His son Edward John Ridgway built their present Bedford Works in Hanley, where this family still produce china, as well as "Granite" and printed ware for the American trade.

Nor must the name of William Brownfield of Cobridge be omitted from any account of the prosperous days of the china trade. This firm, which has now closed down, made trial recently of a profit-sharing scheme, which deserved well of the community. Unfortunately it fell upon the bad times near the end of the last century and was discontinued.

The success of Minton in majolica, tiles and porcelain led the Wedgwoods at Etruria to depart so far from their special black basalt and jasper as to take up similar lines of manufacture. Their brown majolica glaze, known as "rockingham," perhaps the most permanently successful form of majolica, was introduced about 1860.† (This

* Ward, "Stoke-on-Trent," p. 374.

† Furnival, *op. cit.*, p. 189.

"rockingham" glaze had been first employed about 1796 near Rotherham on the Marquis of Rockingham's estate in Yorkshire.)* Then, in 1872, they began again to make porcelain, and this time with great success. A Wedgwood china dinner service of 1296 pieces was selected by President Roosevelt for the White House in open competition with the whole world. From 1880 till 1902 Wedgwoods also made encaustic and white-glazed tiles, though without any financial success. This firm now employs about 700 people, and is carried on by Messrs Lawrence, Cecil and Francis Hamilton Wedgwood, the great-grandson and great-great-grandsons of Josiah Wedgwood, making altogether eight generations of master-potters from father to son, probably a unique example in any industry.

While Mintons, Copelands and Wedgwoods were producing the most costly porcelain, the trade in the commoner china had centred more and more at the Longton end of the Potteries. Charles J. Mason with his "ironstone china" at Fenton between 1820 and 1850 was the precursor of this

* Burton, "English Earthenware," 174.

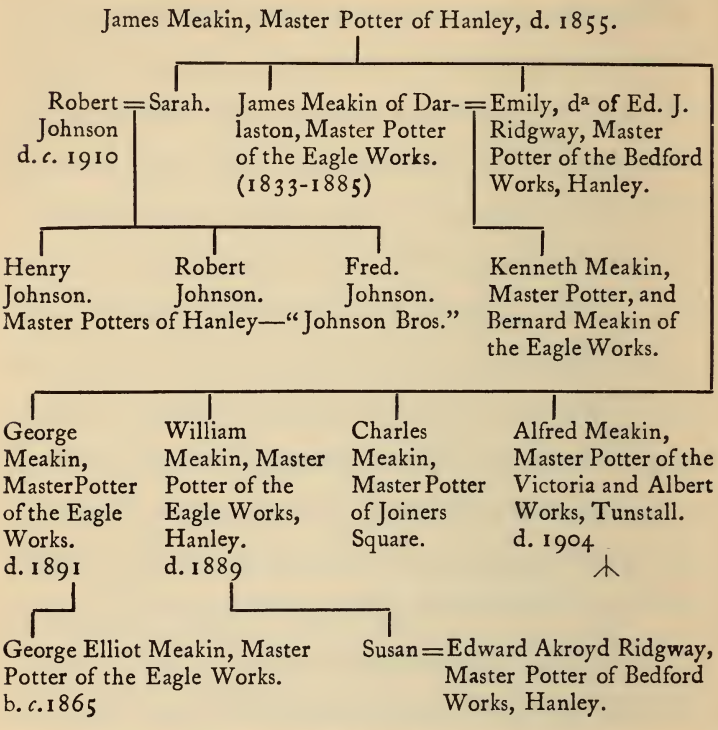
trade, and it was on this export trade that Longton grew so rapidly throughout the 19th century. The manufacture of cheap "jet" and "rockingham" has become of recent years an important branch of manufacture at this Longton end, and very opportunely, for the cheap china trade has suffered more than any other from the German and Dutch competition. Messrs Wileman's factory at the Foley, now owned by Mr Percy Shelley, is the most important, but the Longton china trade generally is in the hands of small men. A great part of this china trade was formerly with America, and, apart from ornamental potting, it has always been the solid American trade which has made the fortunes of the Staffordshire potters. In the forties the chief exporters of earthenware to America were Enoch Wood of Fountain Place, and Samuel Alcock of the Hill Top Works, both in Burslem. Samuel Alcock had several factories in Burslem, and deserves mention for his "Parian" figures, but his great trade was in plain white and cream colour with the United States.* Alcock's old Hill Top Works, where John Mitchell once

* Ward, "Stoke-on-Trent," p. 264-5.

used to entertain Wesley, belong now to Samuel Johnson, noted for his tea-pots.

The close of the American war, 1865, saw the rise of another potting firm destined to grow to importance in the American trade. This was the firm of James and George Meakin. They were the sons of James Meakin, who had been a small master-potter in Hanley, and they produced an uniform hard white earthenware called "granite"—serviceable, plain and cheap. James Meakin, a man of great business capacity, financed and gradually came to control a large proportion of the American buyers, and all through the seventies this firm almost monopolized the trade of the United States in cheap earthenware. James Meakin bought Darlaston Hall, and died in 1885. His "Eagle Works" at Hanley are now carried on by his sons Kenneth and Bernard and by his nephew George Meakin of Cresswell Hall. Alfred Meakin started a similar manufacture at the Victoria and Albert Works in Tunstall in 1874, now taken over by Johnson Bros. These Johnsons, too, nephews of James Meakin, began soon after 1880 to rival the Eagle Works in the production of "granite" and

plain printed ware. They have now no less than five factories in Hanley, Tunstall and Burslem



specially equipped for this trade. The fourth of the firms known as "The Big American Four" (now reduced to three) is that of W. H. Grindley, who began in 1887 to make "granite" at Wood and Challenor's old Woodland Works in Tunstall. His new factory at Brownhills is said to afford the best example of up-to-date econo-

mical manufacture, and stands out in striking contrast to most of the older "artistic" works. Another factory which owes its reputation to strict specialization and the latest economical machinery is that of Samuel Gibson, in the Moorland Road, at Burslem. Here five hundred men and girls make tea-pots for the world—only tea-pots—in jet and brown and rockingham.

The china trade and the American "granite" trade had their best days from 1870 to 1876. No doubt the general expansion of trade and the temporary absence of foreign competition were the chief factors in producing this prosperity. But a great deal was due to the increased use of steam power and the introduction of automatic machinery, and also to the institution of the Potteries Board of Conciliation and Arbitration.

The clay filter press, with its steam slip-pumps —patented by Needham and Kite in 1856—had replaced the old method of evaporating the moisture out of the clay slip; and during the seventies a mechanical steam-driven "blunger" and a similar "pug-mill" did away with the old laborious "blunging" and "wedging" in the preparation

of the clay body. Then that form of the thrower's wheel, known as the plate "jigger"—which revolved the flat plate moulds—came to be driven by steam instead of by a boy at the wheel handle; and instead of the skilled hand of the flat-presser, a mechanical "form" or "jolly" was used to press the "bat" on to the mould, and give the plate the right contour and thickness.*

Such machines for making plates had been invented as long ago as 1845, but for twenty years the objections of the workmen and practical imperfections had postponed their introduction. The "form" used to be applied by hand, and the plates consequently varied in thickness, and it required great skill on the part of the presser to make them properly. The machine, on the other hand, made every plate exactly alike, and made them ten times as quickly as the old hand process. This machine did away with the work of the old skilled "flat-pressers," and was in general use by 1870. A similar machine, with a somewhat more complicated "jolly," or "form," made hollow-ware,

* Paper read by Mr Frank Harris before the Ceramic Society, 1905.

such as basins and cups, or even bellied ware, such as ewers or chamber-pots. These came into use gradually from 1870 onwards, and replaced much of the work of hollow-ware pressers and throwers. Then in the eighties came a machine for flattening out those bats of clay which were to be pressed on to the "jigger" moulds and "jollied" into flat or hollow ware.* About the same time, too, the steam drive came to be used for turning the thrower's wheel and for the turner's lathe—fitted with various devices for controlling the speed of revolution. The manufacture of potters' machinery is now a considerable industry, and, thanks to the energy and inventive readiness of Messrs Boulton of Burslem, this industry also is centred in the Staffordshire Potteries, and has as wide a range of markets as the Staffordshire pots themselves.

The introduction of all these labour-saving appliances was facilitated by the co-operation of masters and men on an arbitration board. A Trades Union—the fourth—had been reconstituted in 1863 from a few surviving branches of the old

* Paper read by Mr F. Harris before the Ceramic Society, 1905.

Union. They started a fresh newspaper, "The Potteries Examiner," under the able management of the new Leader, William Owen, the nephew of Robert Owen, the Socialist. By 1865 they were strong enough to strike against that good old trade custom—the annual hiring. The oven-men's Union, always the most determined branch of the Potters Trades Unions, refused to give up the fight when the other trades were prepared to go in, and by holding out alone they at last succeeded in abolishing the annual hiring, and secured for the potter the right to give a month's notice. This was in 1866, and the whole trade shared the benefits of the change.*

The Staffordshire Potters Unions seem at each burst of activity to have evolved some special enthusiasm or eccentricity. There was the attempt at co-operative manufacture in 1825; the enthusiastic idealism of Robert Owen in 1833; the attempt to put the unemployed on the land in Wisconsin, and so relieve the labour market, which absorbed the enthusiasm and funds of 1845-6; and now the new Union of 1863, under the guid-

* Harold Owen, *op. cit.*, p. 112, 113.

ance of William Owen, originated a far more important and practical movement—arbitration in industrial disputes.

At Nottingham, Mr Mundella had in 1867 established a Board of Arbitration in the stocking trade. Its success made it attractive to both masters and men. William Owen approached Mr Mundella, who brought his influence to bear successfully on the pottery masters also, and in July, 1868, a similar Board of Conciliation and Arbitration was established in the potting industry.* On it there were ten representatives of each side, who were wherever possible to decide questions that arose. When they could not agree an umpire was to be appointed, whose decision was to be binding. Such men as H. T. Davenport, M.P., Mr Mundella, Sir Thomas Brassey, "Tom" Hughes, have at different times been umpires.

At first the Board worked well. The introduction of each machine was made the occasion for a readjustment of prices; and, although the struggle over "good-from-oven" goes on to this day, the first step was taken before the Board in 1869 on

* Harold Owen, *op. cit.*, p. 115.

the motion of one of the masters' delegates, Mr Francis Wedgwood, to abolish this old trade custom and substitute "good-from-hand."* An arbitration award in 1871 raised wages generally.†

But the strain came when the masters tried by arbitration to reduce wages. The award in 1877 went against them; in 1879, however, they were more fortunate, for Lord Hatherton awarded a reduction of 1d. in the shilling.‡ A journeyman potter's wages may be said to have averaged 30s. a week when in full employ, and what are still remembered as "Lord Hatherton's pennies" were a great grievance in the Potteries. Probably the Board would have broken down at once had it not been for Owen, and for the hope that arbitration next year would put it all right again. But Sir Thomas Brassey's award on next year's arbitration made no change,§ and the Board broke down. At Martinmas 1881 a strike began. It was an immediate failure, for thirteen years of arbitration had sapped the strength of the Union.

* Harold Owen, *op. cit.*, p. 124.
† Harold Owen, *op. cit.*, p. 144.
‡ Harold Owen, *op. cit.*, p. 160.
§ Harold Owen, *op. cit.*, p. 177 *et seq.*

For a short time—1885-91—an Arbitration Board was re-established, but it was tolerated rather than supported by either masters or men. In 1891 another award was given against the men, and the Board was painlessly extinguished by a strike of the fighting oven-men. Since then the Union has gradually gained strength, but even now, after a successful strike in 1900 which raised wages by 5 per cent. all round, the potters in all the Unions do not much exceed 20 per cent. of the adult male workers alone. Trades Unions have special difficulties in the Potteries owing to the large number of small masters employing only two or three people in each trade; owing to the prevailing piecework prices which makes the levelling up process difficult; and owing to the number of small Unions into which the working potters are divided. John Lovatt is at present the secretary of the General Union, while Alderman Thomas Edwards for long looked after the special interests of the oven-men.

Invention of recent years has busied itself mostly with the firing of the ovens. Mr J. P. Holdcroft, of Hanley, patented in 1898 a new thermoscope

which directs with far greater certainty the exact heating of the ovens.* New methods of firing these ovens are also on trial. Both "Producer" and "Mond" gas have been tried and offer some hope not only of more regular firing, but also of abolishing the columns of smoke which have blackened the Potteries for 200 years. The "Climax Kiln" is another device of quite recent date for regulating the firing, and saving the piling up and unpiling of saggars of ware. The ware is packed in an iron cage on wheels and pulled in and out of the furnace mechanically, without drawing the fire.

Both the "Climax Kiln" and a new method of polychrome printing—whereby one transfer only is used to impart many colours to the piece of ware to be printed—have been introduced within the last six years by Mr Leonard Grimwade, perhaps the most enterprising potter of recent times. Mr Grimwade has specialized for the Colonial markets, and holds in them much the position held by Meakins in the American trade. His factories are in Hanley and Stoke, adjoining the Stoke Railway Station.

* Furnival, "Leadless Decorative Tiles," p. 411-12.

An off-shoot of the potting trade which almost amounts to an invention by itself is the manufacture of stilts, spurs and thimbles. These are the small "bits" put between the wares to prevent them sticking together when fired in the saggars, and they used to be made when and as wanted in each separate pot-works. It was Charles Ford of Hanley who, about 1840, first made a special factory for these spurs and stilts. He used metal die-stamps driven by a steam hammer which stamped out stilts by the score at a time. James Gimson followed with the invention of the "thimble." These conical thimbles fit into and one above each other and have a lug on the rim, so that three pillar-supports are built up on which a whole "nest" of plates can rest while in the oven without touching each other. Stacked in this way, the "bits" make no marks on the face of the plate. Somewhat later Wentworth Buller, a member of the well-known Devon family, started a stilt and spur factory at Bovey Tracy in Devonshire, and, finding the cost of carriage to his market prohibitive, he moved his works about 1865 to Hanley. Here he began

in 1866-7 to make telegraph insulators—a new pottery industry. He was joined shortly after by his cousin, Captain Ernest Wentworth Buller, the brother of Sir Redvers and an engineer, who became sole owner in 1869. In 1872 J. T. Harris joined the firm, which is now controlled and carried on by his son, John Harris. Having obtained a foothold in the electrical trade, this firm was naturally called on to do all the early electrical work. Just as they had stamped stilts and spurs so they stamped switches, cut-outs, "roses," and all manner of electric fittings. In 1896 Captain Buller sold out and retired. The elaborate insulators now used are thrown by hand and then turned and screwed, and nearly half the world's supply comes from Bullers Limited.

A somewhat similar trade was carried on by James Mackintyre and William Woodall, M.P., at Burslem, in the manufacture of furniture fittings. Door plates, door knobs, knobs and buttons of all sorts for the furniture trade are stamped in dies by the score, as are the stilts and spurs. Messr Mackintyre are still the chief makers of furniture pottery, though they have by no means a monopoly.

Saggars in which ware is packed for firing are also made by the direct pressure of a large die or press upon the plastic marl.

Messrs Bullers' most formidable rival in the making of insulators is the firm of Doulton's Limited; and this last firm carry on also several other variations of the staple trade. Sir Henry Doulton (1820-97)* began by making sewage pipes at Lambeth. His trade increased, and he started branch works for making these things at St Helens and at Rowley Regis and Smethwick in South Staffordshire. Between 1867 and 1873, however, he diverted his attention to the more ambitious "Electric" and "Sanitary" ware, and also to the characteristic stoneware known as "Doulton's." This new stoneware caught the public fancy, and to it he devoted his Lambeth works. He continued to make the drain pipes at Rowley Regis, and at Burslem he bought in 1877 Pinder & Bourne's works in Nile Street for his other manufactures. Here Doulton's produce high-class china and earthenware as well as sanitary and electric pottery and employ nearly 1,300 hands.

* "Dict. Nat. Biog.": "Henry Doulton."

Sir Henry Doulton was knighted in 1887, the only potter ever so honoured, and died in 1897. In 1899 his son, Henry Lewis Doulton, converted the business into a limited company.*

But the branch of the trade known as sanitary pottery owes most of its development in Staffordshire to Mr Thomas William Twyford. His father Thomas Twyford started making plumbers' ware about 1860, and when he died in 1872 both the Abbey Works and the Bath Street Works in Hanley were making basins and closet-pans of an elementary kind. But no real advance took place till the eighties. In 1885 the wash-out Pedestal closets were introduced, made entirely of earthenware, and in 1889 the latest "deluge" type followed. Those who can remember the old dirty enamelled iron pans will recognize the debt that sanitary science owes to the enterprise of Twyford.

All Twyford's sanitary pottery was in 1887 concentrated at the present Cliff Vale Works, and experiments were at once set on foot for yet another branch of manufacture. This was the production of very large clay pieces coated with a

* Furnival, "Leadless Decorative Tiles," p. 200-1.

smooth white surface and suitable for baths and lavatories. The common or fire clay is coated while in the plastic state with a porcelain enamel, which on firing gives a surface enamel polished as marble and more adhesive than any enamel on metal. Very large pieces are coated in this way, and the earthenware article has since 1890 been replacing alike the enamelled metal of Wolverhampton and the marble of Italy. Messrs Twyford's chief rivals in Staffordshire are the firm of John Taylor Howson of Hanley.

From an artistic point of view the only improvements of recent times are—beside M. Solon's pâte-sur-pâte and Doulton's stoneware—the lustre ware of Mr William Burton and the "flambé" ware of Mr Bernard Moore. Mr Burton's factory unfortunately lies outside Staffordshire, but much of his work, both public and private, is still done in North Staffordshire. He and Mr Moore are the most enterprising chemists and experimenters of the present race of master-potters, and their efforts have also been accompanied by a marked improvement of taste in enamelled earthenware and porcelain.

There remains one modern improvement to point out. It is in the health of the potters. For generations potter's asthma and lead poisoning have taken their toll of the workers on the pot-banks, but within the last ten years changes have been made, unfortunately only as a result of State interference, which are very sensibly affecting the rate of mortality in the industry.

It was not till 1864 that the Factory Acts interfered in the potting industry. In that year women, young persons and children in the pottery trade first came under the protection of the State. Their hours were limited to ten a day, and Saturday became a statutory half-holiday. This meant a half-holiday for all workers on the pot-banks. Half-time employment has never been considerable in the Potteries, and since the passing of the Education Acts it has gradually and entirely died out. Later Factory Acts have applied to Potteries as well as to other factories, but it was when the Bill of 1891 got into committee that the potting trade became specially and vitally interested in these Acts.

During the passage of the 1891 Factory and Workshop Bill the working potters managed to

get added to it a provision empowering the Home Office to make, after due investigation, special rules for the conduct of "dusty processes" in dangerous trades, including potting. As soon as the Act passed, a committee was appointed, and on their recommendation special rules were drawn up, making for greater cleanliness in the dusty and dangerous processes. The employers objected, and a conference followed in 1894 under the presidency of Mr G. W. E. Russell. Nevertheless the rules, slightly modified, were approved and became law.

These special rules, however, were concerned more with general dusty evils and affected potter's asthma rather than the lead poisoning question. But in 1898 Prof. Thorpe and Dr Oliver drew up their celebrated report on lead poisoning for the Home Office—a report which for a time threw the whole trade into the most furious excitement. The doctors averred that glaze could be made without lead, or without lead in any but the innocuous "fritted" state. What the employers said was emphatic and contradictory. They threatened to close down the whole trade, and no doubt

the report was hasty and ill-considered. For four years the controversy raged, and at last in 1902 an arbitration court was held before Lord James of Hereford. Under his award a new set of special rules were drawn up. These rules, besides enforcing sanitary provisions such as those for monthly medical inspection of workers "in the lead," compelled those manufacturers who continued to use lead in a dangerous state to compensate those of their workers who suffered from lead poisoning, a liability now generally embodied in the 1907 Workmen's Compensation Act.

When one remembers the intense hostility to this Home Office interference, it is curious to see how satisfactory and easily the rules have worked in practice. Potter's asthma is nearly extinct, and lead-poisoning cases in the Potteries have fallen from an average of 362 a year in the period 1896-8 to 93 a year over the years 1905-7.* About 5 per cent of the cases result in death. The chief credit for this new departure should be attributed to William Owen of the Potters' Union, and to the Duchess of Sutherland and Sir Charles Dilke.

*Official Returns.

The latest statistics of the industry show that in 1901 there were about 400 factories employing some 21,000 adult males, 16,000 adult females, and 13,000 young persons under 18 years of age.* The employment of great numbers of married women (some 8,000) and the consequent high rate of infantile mortality are now the most serious features of the industry from the sociological point of view.

In conclusion the official figures are given for the export of china and earthenware, so as to show the prosperity at different times of the staple trade of North Staffordshire.

*Harold Owen, "Staffordshire Potter," p. 334.

Year.	1840	1841	1842	1843	1844	1845	1846	1847	1848	1849	
Value of Exports China, Earthenware and Stoneware £'000	573,	601,	555,	629,	767,	828,	793,	834,	722,	807,	
Value of Imports											
Year.	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859	
Exports £'000	999,	1,121,	1,152,	1,338,	1,306,	1,001,	1,334,	1,492,	1,154,	1,314,	
Imports £'000											
Year.	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	
Exports £'000	1,451,	1,071,	1,220,	1,341,	1,439,	1,469,	1,686,	1,666,	1,683,	1,828,	
Imports £'000											
Year.	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	
Exports £'000	1,746,	1,865,	2,142,	2,206,	1,862,	1,859,	1,771,	1,853,	1,794,	1,800,	
Imports £'000	165,	202,	263,	383,	370,	382,	399,	365,	441,	433,	
Year.	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	
Exports £'000	2,066,	2,204,	2,309,	2,333,	1,956,	1,838,	1,901,	1,984,	2,098,	2,287,	
Imports £'000	469,	555,	596,*	603* / 533‡	482,†	465,†	451,†	472,†	549,†	590,†	
Year.	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900
Exports £'000	2,251,	2,165,	2,057,	1,985,	1,759,	1,992,	1,967,	1,900,	1,820,	2,042,	2,038,
Imports £'000 less Re-exports	586,	620,	623,	594,	594,	627,	743,	724,	782,	779,	777,
Year.	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
Exports £'000	1,993,	1,900,	2,176,	2,106,	2,098,	2,382,	2,649,	2,344,	2,315,	2,780,	3,030,
Imports £'000 less Re-exports	758,	742,	788,	765,	789,	845,	880,	792,	735,	746,	858,

* Gross Imports, including goods re-exported. † Net Imports, excluding goods re-exported.

APPENDIX II.

The direction of the Foreign Trade in 1911.

	£
Exports to the United States	428,000
„ Canada	395,000
„ Australia	309,000
„ the Argentine	279,000
„ India	232,000
„ Brazil	210,000
„ South Africa	133,000
„ New Zealand	125,000
„ France	87,000
„ Germany	81,000
„ all other countries	751,000
Total Foreign Exports.	3,030,000

APPENDIX III.

The nature of the Foreign Trade in 1911.

	£
Earthenware, Semi-porcelain and Majolica	1,828,000
Sanitary Ware	461,000
Red Pottery, Stoneware, Brown Ware	307,000
Porcelain, China and Parian	175,000
Tiles (ex floor, roofing and street paving)	116,000
Floor Tiles	86,000
Electric and Chemical Ware, and Furniture Fittings	51,000
Jet, Rockingham and Glazed Terra Cotta Ware	6,000
	3,030,000

APPENDIX IV.

Nature of Total Pottery Production for Home and Foreign Trade of the United Kingdom in 1907. Of this production less than 5 per cent. comes from Scotland and Ireland, and about two-thirds of the whole is produced in North Staffordshire.

	Home.	Foreign.	Total.
Earthenware, Semi-Porcelain and Majolica	1,683,000†	1,545,000†	3,228,000
Sanitary Ware	472,000†	300,000†	772,000
Red Pottery, Stoneware, Brown Ware	331,000	291,000	622,000
Porcelain, China and Parian	830,000	195,000	1,025,000
Tiles—White, Cream, Glazed or Decorated	362,000†	80,000†	442,000
Tiles—For Floors, Pavements and Mosaics	55,000†	78,000†	133,000
Jet, Rockingham and Glazed Terra Cotta Ware	250,000	3,000	253,000
Electric and Chemical Ware, Crucibles and Furniture Fittings	365,000†	181,000	546,000
Tobacco Pipes*	?	?	90,000
Bricks and Fireclay Goods*	?	?	64,000
Potters' Materials	213,000	?	213,000
Other processes of partial manufacture	146,000	Nil.	146,000
Total	£4,885,000	£2,649,000	£7,534,000

* These manufactures are not at all specialized in the Potteries. † Estimated figures.

APPENDIX V.

Average number of persons employed in China and Earthenware Factories and Workshops in England, Wales and Ireland, 1907.

	Males over 18.	Females over 18.	Males under 18.	Females under 18.	Total.
Wage earners	29,000	19,364	5,790	7,509	61,663
Salaried persons	3,015	286	299	84	3,684

Of these over two-thirds work in the North Staffordshire Potteries.

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