A HISTORY OF TWYFORDS

1680 - 1982

James Denley

Introduction

Today's events are tomorrow's history and it is nearly 90 years since Joseph Hatton published his own story of Twyfords which he called 'Twyfords A Chapter in the History of Pottery'. Now we have added one or two more historical chapters.

I deeply appreciate James Denley's work and would also like to add my thanks to those who have helped him. Both inside and outside the Company, people have been kind enough to give their time to enable us to gather together the wealth of information contained in this book. Inevitably there are omissions, but nevertheless, I am sure our history will be treasured by all those who may follow in our footsteps.

I am particularly grateful to the elder generation, some of who are now in their 80's, for so willingly and accurately recalling the events of past years. They have been our vital link - thank you all very much.

Tradition and reputation are two things which money cannot buy and when you read the following chapters you will see that Twyfords have long and strong roots. But let me encourage you not to regard past achievements like a soft armchair in which to relax, but rather consider the past as a firm and solid springboard for the future development of Twyfords.

Harry Barclay
Chairman
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CHAPTER ONE

A Thousand Years Unwashed

To late 20th century homo sapiens, living in a part of the world where good sanitation and reasonable hygiene are taken very much for granted, it is by no means easy to picture, in all its manurial vividness, what life was like before these conditions became the norm.

On holiday, in some unspoiled resort or foreign backwater, you may think you have witnessed sanitation at its most gruesome - but to coin a phrase, you have not even scratched the surface.

If you take the ordinary family, living in the crowded towns and cities of early 19th century England, however, you may get a much better idea of what it was really like to plumb the depths.

The population was growing at an enormous and unprecedented rate. (It much more than doubled in the first 30 years of the century). Yet the number of worthwhile water-closets in the entire country could probably still be counted in thousands.

Only the fortunate few enjoyed the salubrious benefits of the bathroom, or even fairly primitive sanitary apparatus, while most, in their teeming garrets, had to cope with sordid privies, pans and ash-pits - if they were lucky.

In rural areas, the inhabitants could at least step into the garden, as Dean Swift put it, 'to pluck a rose', but otherwise, things were little better - and even royalty and political grandees had serious sanitary problems.

As late as 1844, Prince Albert, the Prince Consort, was horrified to discover 53 overflowing cess-pools cringing beneath the towers and ramparts of Windsor Castle, and on hot days, when the breeze was in the wrong direction, the River Thames so stunk of sewage that Parliament had to suspend its sitting - as it did in 'The Great Stink' of 1858.

'Hell' wrote the poet Shelley, 'is a city much like London' - and it is only when you consider that it had been like this for hundreds of years, that you begin to understand the impact the sanitary reformers had on late Victorian England. Pioneering men like the Twyfords - the story of whose company this is - changed our lives quite as profoundly as say, Marconi, Ford, Edison or Baird - and it is perhaps only because of our more tender susceptibilities, that they are not given the credit they so richly deserve.

‘The story of sanitation’ says Roy Palmer in his excellent history ‘The Water Closet’, ‘seems to be one of spasmodic efforts soon forgotten’ - and this appears to have been precisely the case all down the long and insanitary years.

One of the oldest surviving privies, for example, at Mohenjo Daro in India, is over 5,000 years old.

Half-a-dozen, no less, have been found in the second millennium Sumerian Palace of Sargon, King of Kings, and in the City of Akhenaten, at Tel-ek-Armana; we know that at least one ancient Egyptian enjoyed a shower bath, and a key-hole shaped closet, with a buttock-shaped limestone seat.

So clearly, pre-historic plumbers have done it all before, as we shall see, with considerable panache.

The Cretan Palace of Knossos has been described as “a plumbers’paradise” and well it might be. From around 1650 B.C. it had an extensive system of drains, fresh water pipes and settling tanks. You can still see the closets which almost certainly flushed, and a bath virtually identical in shape with its late nineteenth century successor.

The island, as tourists will know to their cost, is considerably less well-equipped today, although in Heraklion Museum, where the treasurers of Knossos are kept, the gentlemen’s cloakroom can boast a row of superbly plumbed Twyfords Cascatas - 3,600 years after Knossos, circa. 1950 A.D..

More familiar than the Minoans perhaps, the Romans were also skilful plumbers - the very word sanitation stemming from ‘sanitas’ meaning health.

By the first century A.D., Rome’s water supply was provided by eight main aqueducts, about 22Omiles long, and the sheer scale of their operation defies belief. The baths of Diocletian are said to have accommodated an incredible 3,000 people, whilst those of Antoninus Caracalla, dating from around 215 A.D., covered an area of 28 acres or six times the site of St. Paul’s! ‘In the fourth century A.D.’ wrote Lawrence Wright in his sanitary classic ‘Clean and Decent’, ‘Rome had 11 public baths, 1352 public fountains and cisterns, and 856 private baths.’ In addition, as well as private water-flushed latrines, there were plenty of public ones’ - 144 is the figure he gives - and the city supplied water at the staggering rate of ‘300 gallons per head, per day’.

The Romans, of course, brought the concepts of piped running water and bathing to Britain, and built baths over natural springs - as at Aquae Sulis at Bath. They included among their pantheon, ‘Crepitus’ and ‘Cloacina’ - god of conveniences and goddess of sewers - and even at the nethermost outpost of Empire, they did their best to keep up standards.

Featured in Lucinda Lambton’s splendid photographic essay ‘Temples of Convenience’ is the magnificent latrine at Housesteads, on Hadrian’s Wall - on the very edge of Roman civilisation. There, like British colonials dressing for dinner in the jungle, 20 legionnaires could sit cheek-by-jowl, and having performed successfully, make use of communal sponge sticks in lieu of paper.

The problem in sanitation was never one of invention, but one of continuity. After each blossoming of civilisation - even after the Romans - skills were lost or neglected, and the standards of the barnyard came back into play.

Though there were innovations in almost every century, there was little sustained improvement until a mere generation or two before the days of Twyfords, in the mid-19th century.

There were, it is said, a thousand years from 300 to 1300 A.D., when Europe went unwashed, and this could comfortably be extended by nearly another half millennium without more than marginally bending the truth. The Dark Ages were also the dank and dirty ages; the later medieval period was a mire. The lot of the average peasant was not conducive to enlightened attitudes, nor even to regular washing, and as far as the early church-men were concerned, this was all to the good. Like St. Francis of Assisi, they believed that dirtiness was next to godliness, and bathing a penance.

As in so many things, the monasteries were to prove an exception, and just as they helped preserve learning in the midst of barbarism, so they helped maintain a level of sanitary devotion.

At Canterbury', at the end of the 12th century, both cathedral and monastery enjoyed sophisticated plumbing, with lead piping, settling tanks to purify the water, and a constant supply for layers or washing troughs, baths and latrines.

Similarly, in 1220, at the Priory of the Canons Regular at Trim, in Ireland, some of the very earliest glazed clay closets were built into a four-holer latrine, flushed by water from a conduit. But like other holy houses which sought to cleanse the body as well as the soul, Canterbury and Trim were but islands of hygiene in a sea of squalor.

Sanitary innovation took one step forward and three steps backwards.

London received its own piped water supply, via Tyburn, in 1237, but for reasons it is perhaps better not to go into, this was not altogether an undiluted pleasure. The River Fleet where it flowed through the city was little more than a seething open sewer, and in 1355, though it should have been 'deep enough to float a boat laden with a tun of wine' the Fleet Prison ditch was choked solid with filth. This was not entirely surprising.

Medieval latrines, domestic privies and castle garderobes all tended to work by what you might call 'the long-drop method', built on-high so the discharge could plunge directly into river, cess-pit, moat or midden below.

Alternatives included simply throwing your 'annoyances' out of the window, piping them into a common drain in the middle of the street, or as in one celebrated case, into your neighbour's cellar. It was illegal, of course; in 1345, you could be fined two shillings for 'defiling the streets', and it got more expensive as time went on.

By a Royal Warrant of 1358, ‘all dirt, dung and filth’ had to be removed from the streets and lanes, and if you were caught hurling ‘issues, dung, entrails or other ordure in ditches, rivers or waters’ then by a Royal Proclamation of 1388, you were fined £20 - which in those days, was a King’s ransom.

The embattled authorities appointed refuse men - variously called ‘scavengers’, ‘gongfermors’ or ‘nightmen’ - to empty the pits and generally clear up the mess, and it was a common sight to see them moving with horse, cart and shovel amid ‘the doorside heaps’. One of their number, the legendary Richard the Baker, met his death in a way if hideous, had certain poetry about it. He fell through the rotten planks of the privy and plummeted to his doom, drowning ‘monstrously’ in his own cess-pit.

The stream of filth continued unabated, and while royalty might sign warrants and proclamations, it did not readily lend itself to the cause of sanitation by personal example. King John, clean to a fault by the lights of his subjects, bathed every three weeks. Queen Elizabeth I took a bath once a month ‘whether she need it or not’, while Queen Isabella of Castile claimed that she only had two baths in her life - ‘one at birth and one at marriage’.

Monarchs, on the whole, seemed to favour the pot in preference to the privy, and from Henry VIII to James II, kept their ‘close-stools’ close by them. Louis XIV, ‘le Roi Soleil’, received ambassadors while sitting, as it were, on the throne, and when he announced his marriage to Madame de Maintenon, he did so while at rest on one of the 264 commodes which graced the Palace of Versailles.

On the credit side, James I gave Sir Hugh Myddleton financial assistance to improve London’s water supply by bringing the man-made New River 35 miles from Hertfordshire to Sadler’s Wells - although when it was finished in 1613, the King was the first to fall in! (This was probably one of the few times this notably dirty monarch ever actually washed beyond his fingertips).

Queen Anne, his great grand-daughter can also lay claim to a soupcon of sanitary pioneering, for in the early 18th century, at Windsor, she had ‘a little place of easement of marble, with sluices to wash all down’. Anne’s reign sees the start of what is often referred to as ‘the Age of Awakening’ - the period between 1700 and 1850, when sanitary innovation grew less intermittent.

Washing and bathing started to become more regular habits, and various kinds of water closet began to emerge - treated as curiosities at first, although by the 1780’s, they were starting to win acceptance. But this is also the time of successive social revolutions - the parliamentary enclosures, the drift to the cities, dramatic increases in population and the great burgeoning of industry. So from a sanitary point of view, things got a lot worse in many ways, before they got better.

Overcrowding without a comparable increase in facilities, meant that technical improvements ran side by side with the familiar unsavoury flavour of 18th century sanitation. The fashionable spa-baths of the period were more likely to damage your health than improve it, while in contemporary Edinburgh - like the baths, graphically described in Smollett’s ‘Humphrey Clinker’ - the waste of some

50,000 persons was nightly cast out of the windows and into the streets. The renowned accompanying cry of ‘gardez l’eau’ which roughly translated meant ‘run for it’, probably also gave us the expression ‘loo’.

In 1750’s Edinburgh, people hawked the streets at night, wearing voluminous capes and carrying buckets. With their cloaks, they covered their customers, while the customers made use of the pail. Almost exactly one hundred years later, according to that most articulate of all the sanitary pioneers, S. Stevens Hellyer, ‘every house in Edinburgh had a water closet’. ‘The Golden Age’ of sanitary reform was by then just beginning to dawn. The time was now ripe for the Twyfords.

CHAPTER TWO

The Family Connection

The Twyfords were among the first of the great sanitarians. They were contemporaries of George Jennings, Henry Doulton, Hellyer, Thomas Crapper and the rest, and in the last half of the 19th century, their finest inventions were hailed as landmarks in the course of domestic sanitary reform.

They were new men, in a new age, pioneers and innovators in a business which had not existed on any scale before. But unlike many of their fellows, they were by no means newcomers to the potter's field.

The Twyfords can be traced back in the history of North Staffordshire to the early 17th century, and by the time they were making their mark on the Golden Age of Sanitation, they were potters of the fifth and sixth generation. The dynasty was founded by Joshua Twyford, a man who, like most of the rest of the population, almost certainly never owned a bathroom, and for most of his life, would not have known what a water closet was.

Born in the family home in the ancient village of Shelton, now part of Stoke-on-Trent, Joshua made his first official appearance at his baptism in 1640. He was the son of William Twyford, a plain Staffordshire yeoman, and his wife, Margaret. His younger brother, Joseph, was born twelve years later, and he had five sisters - Sarah, Margaret, Ann, Mary and Clare.

At the time, the Twyfords native village was little more than a cluster of houses on and around the brow where Shelton Church now stands. It would have been still a predominantly peasant community, and as a yeoman, father William would have been one of its more substantial residents. Not for him, the few pence a day wages and tiny, two or three-roomed cottage of the average villager, but land of his own, property interests and a sizeable house. The family even had some slight pretensions to grandeur.

Tradition has it that the Twyfords migrated from Derbyshire, probably from the village of Kedleston, and in their day, the Derbyshire Twyfords were important people. There were two noted 14th century parliamentarians in the family, in John and Sir Robert Twyford. But probably the most illustrious of them all, was Sir Nicholas.

Brought up in London and trained as a goldsmith, Nicholas Twyford became a prosperous guildsman, Goldsmith-in-Ordinary to King Edward III and Warden of the Goldsmith's Company. He numbered John of Gaunt and King Richard II among his customers, and in 1381, was with the King at Smithfield when he met Wat Tyler, the leader of the Peasant Revolt. When Tyler was killed in the ensuing fracas - probably by the Lord Mayor, Sir William Walworth and John Standwick, one of the King's esquires - Nicholas had a hand in it, and for this rather over-

enthusiastic display of loyalty to the crown, he was knighted. He went on to become Lord Mayor himself in 1388, and when he died, two years later, left estates in Tottenham and Middlesex to his wife Margery, and after her death to his kinsman John.

In 1413, a William Twyford, possibly a relative, was valet to the Earl of Arundel, and up to Henry VIII's time, Twyfords owned the manor of Kirk Langley, until the heiress of one Thomas Twyford, who died in 1522, married Henry Pole of Chesterfield.

It was from such stock as this that the Twyford potters like to think they came.

Why or when Joshua took up the world's second oldest profession is unknown, as is all of his early life. But certainly, the first Twyford potter was born into troubled times.

In the year of his birth, Charles I's disastrous Long Parliament was called into being, and within two years, England made the long leap into bloody civil war at the battle of Edgehill.

Joshua would have been only eight or nine years old when Charles was executed at the Banqueting House, Whitehall, on January 30th 1649, and the boy grew up in the dour reign of England's only dictator, Oliver Cromwell.

All through the Commonwealth and the years of Charles II's restoration, we hear nothing of him. Then when he reappears in the records, in 1675, he is 35 years old and already a potter. In the July of that year, according to a small court held at Penkhull, William Twyford, Marmaduke Browne and Thomas Brerehurst surrendered their right over the Whitehouse, Gilbert's tenement, and Spooner's tenement, all in Shelton, to the use of Joshua Twyford.

'Because it was one of the best properties in Shelton', possession of the Whitehouse entailed certain responsibilities, and these Joshua duly took up. He served in the office of Churchwarden at Stoke Parish Church, and became Reeve of the Manor of Newcastle-under-Lyme.In 1687, when already in middle age, he married Sarah Lowe of Trentham, and they had two sons - William baptised in 1689 and John in 1690 - both of whom we know became potters.

During his lifetime, dramatic improvements took place in the quality of Staffordshire pottery, and there is a curious story, of doubtful origin though often repeated, of the strange part he played in them. At that time, Joshua would have been one of a number of local potters using native clays of the area to make earthenware. For the most part, their workshops were small, often attached to or part of the family home, and by the standards of even a few years later, their wares were heavy and crude. Pioneering work, however, was being done elsewhere, notably by John Dwight of Fulham and the Elers brothers, late of Amsterdam.

Dwight, one of the great architects of English pottery, developed a method for making fine translucent earthenware and plumbed what Dr Plot, the 17th century antiquary called 'the mystery of the stone or Cologne wares'. In 1671, he

patented these methods, along with the process for salt glazing stoneware - a patent he extended in 1684 and was forever vainly defending against the depredations of other potters.

'Borrowing' techniques was, as always, a common practice. Among those who borrowed from Dwight were the Elers, and among those who likely borrowed from the Elers was Joshua Twyford. The Elers, John Philip and David, were the sons of Martin Elers, Burgomaster of Amsterdam. They had come to England in the wake of the 'Glorious Revolution' which swept William of Orange and Mary to the throne in 1689, and in the early 1690's, ventured north of London to establish a pottery at Bradwell, near Stoke, apparently attracted by the fine red clay of the district. The brothers were silversmiths as well as potters, and the blend of skills was apparent in their work. With the new techniques of purifying clay they were said to have introduced, they produced red-ware of exceptional quality. The pieces were extremely fine - almost like silverware made ceramic - and in dramatic contrast with the cruder work of the local potters.

Needless to say, these developments aroused considerable interest among the local men, and a legend grew up around the lengths to which it was claimed the Elers would go to protect their manufacturing secrets. Their factory at Bradwell was in a very secluded spot and they stored their wares about a mile away at Dimsdale Hall, where they lived alone. To avoid the iniquities of industrial espionage, they were said to have chosen their servants and workpeople from the most dull-witted individuals they could find - the theory being that they would be neither interested nor intelligent enough to fathom the mysteries of manufacture. 'They looked for hands, not heads' wrote Twyfords historian Joseph Hatton. Tradition has it that a congenital idiot was employed to turn the potter's wheel, and employees were said to have been locked in their workshops, so they might not witness the whole of the process.

Communications between different parts of the factory were believed to have been by voice-pipe only, and as if this were not strict security enough, the workpeople were subjected to close examination before leaving the premises at the end of each day's work.

In the end, even these improbable precautions were not enough, for so the legend goes, Joshua Twyford determined to penetrate the Elers secrets, and in order to do so, adopted an equally improbable stratagem.

Shrewdly, he applied for employment at the Elers factory, while pretending to be a half-wit. Being thus admirably well qualified, he was taken on at once, and managed to sustain an apparent indifference to the operations going on around him. By persevering in his adopted idiocy, he succeeded in his aim.

He was considered safe to employ in every department, and thanks to his expected slowness, was given the time and opportunity to master all aspects of the Elers' art.

At home in the evenings, he made detailed records of all the processes involved, and after two years of subterfuge, returned to work on his own account - with a much improved knowledge of the latest techniques in pottery manufacture!

How men like the Elers were so easily duped; why a man at least in his fifties, who was already a potter, could find no easier method of discovering his competitors' secrets, and what happened to his own business in the meantime, are not things the chronicler of the story cares to explain.

Virtually the same tale is told of the Shelton potter, John Astbury, who was considerably younger than Joshua, and presumably followed him into the Elers employ - and in both cases, the end is the same.

The Elers were mortified to discover that their secrets had been stolen, and immediately decamped to London 'believing in the desirability of being near the principal market for their wares - and in fact, they did move south again, before the century was out.

(The expression 'don't ask me, my name is Twyford' - first recorded in 1694 - and current until the 1830's - may well have derived from the part Joshua played in the story. It means 'I know nothing about it'!).

Unwittingly instructed by the Elers or not, Joshua Twyford established a pottery manufactory of his own at Snowhill, Stoke-on-Trent, and came to own a number of workman's cottages nearby, in the now demolished Twyfords Square.

It is not known for certain what kind of work he produced there, but the likelihood is that in common with his contemporaries, he would have made predominantly red slip-ware, decorated with red or white clays and lead glaze.

Along with Astbury, he is also credited with being among the first to use the whiter-firing Dorset and Devon ball clays - initially as an engobe or coating, and later was part of the earthenware body itself - although these clays were not brought into Staffordshire in any quantity until the1720's, by which time Joshua was a very old man.

The only 'known' piece of his pottery - a tea-pot or chocolate pot bearing the inscription 'Sarah Twyford 1686' - has long since been discredited as a late 19th century or early 20th century fake, though it fooled a lot of people for a long time, and is now kept in the Stoke-on-Trent Museum as a curiosity.

The founder of the Twyford pottery, to quote the ever colourful Hatton, 'proceeded in the even tenor of his ways' until his death in 1729, at the advanced age of 89 years.

Sadly, in the last days of his life, he was to witness the death of his elder son, William, and the two were buried within weeks of each other: William on August 1st; Joshua on September 8th.

Behind them, they left what, by then, must have been a flourishing family business, and in William's will, the picture painted is less that of the cottage potter, than one of a prosperous tradesman, with landholdings and properties.

These he left in their entirety to his wife Ellen, along with all his worldly goods,

and his profits from the pottery - although if she were rash enough to remarry, she would be left with a mere ten shillings a year. On her death or remarriage, the bulk of the estate would pass to their son William, or if he were still a minor, to the boy's uncle John Twyford - Joshua's younger son.
To his daughter, also called Ellen, William left the princely sum of £300 - the equivalent of one or even two year's income for the more successful of the local potters - while 'for good and faithful service' to his family, he bequeathed Daniel Botham four pounds or a cow.

Young William was less than a year old when his father died, but it seems reasonable to assume that his uncle, John Twyford, continued the Shelton pottery and that William joined him when of an age to do so.

(Joshua's business was apparently still in operation in 1739/40 and on February 26th 1756, a John Twyford 'potter of Shelton' was buried in Stoke parish churchyard).

At all events, William survived his infancy and did indeed grow up to be a potter. He married Alice, who is thought to have been a daughter of John Chatterley of Hanley, and when he died aged 69 in 1797, he left two sons, Christopher and John, to carry on the business.

Whether they did so or not, is not known with any certainty, but as Christopher's son William, born in 1800, was also a potter, it would seem to be the case. William Twyford is thought to have made general domestic pottery, and there is every likelihood that it was he who was responsible for the first Twyford sanitaryware.

Certainly, it was his sons, Christopher and Thomas, who became the family's first sanitaryware specialists.

Christopher was born in 1825; Thomas just a year later (they looked liked twins) - but throughout their lives, it was the younger brother who dominated their relationship and the family business.

Though with his dark hair, beard and ample girth, Christopher was physically a powerful and robust looking man, he remains a somewhat shadowy figure. He was apparently in partnership with his brother for most of their working lives and in 1858-59, they were both credited with paying rates on their pottery.

In the following year, however, for reasons we know nothing of, Christopher branches out on his own and until his death at 44 in 1869, he lived in Well Street, Hanley, and made sanitaryware independently of Thomas, at his works in New Street.

But though both brothers became prosperous men, it was Thomas who won the greater reputation - and, indeed whose achievement seems to have been larger. Thomas Twyford came to be acknowledged as one of the earliest of the outstanding sanitary pioneers of the 19th century. It was he who first wrote the name of Twyford large in the history of sanitation, and with him, the story of Twyfords as a manufacturer of sanitaryware really begins.

CHAPTER THREE

Into The Closet

Thomas Twyford opened his new sanitaryware manufactory in the aptly named Bath Street Works, in Hanley, Stoke-on-Trent, Staffordshire in 1849. Though still in his early twenties he had already been in business at the nearby Eastwood Works, in Lichfield Street, where he had been making and selling pottery for some time. The date was propitious.

The flood-tide of sanitary reform which swept Victorian England was just beginning to run. In the previous three quarters of a century, after a gap of some hundreds of years, the first significant innovations in sanitaryware had at last been made, and slowly but surely, the use of the water closet was spreading.

Consciousness of the need for better drains and sewers had started to permeate the minds of the civic authorities, and finally, the Government decided to add to the flow of innovation with some revolutionary and much needed legislation.

Efficient sanitation calls for a number of different elements.

At one end, it requires a comparatively wholesome piped water supply, at reasonable pressure. At the other, a network of enclosed sewers to take the waste away, and between them, an efficient water closet, which flushes and is, at least to some extent, self-cleaning.

The fact that since ancient times, these three things had never occurred together on any scale perhaps explains why sanitation made such halting progress.

There never appears to have been any lack of invention as far as sanitary appliances are concerned - even if many were bizarre and most were unsavoury. But there was little incentive to resolve the difficulties of creating a trouble-free water closet, if the other elements of supply and drainage were not readily available to do it justice.

The technology of the water closet as we know it, was understood for generations before it was finally put to use.

In the profoundly filthy 15th century - in 1449 - Thomas Brightfield, a parishioner of St. Martin's, had constructed a stone privy with a lead cistern and pipes - the basic equipment for a flushing closet, some 300 years before its time. Yet while this may have been the first modern convenience, it came to nothing.

Leonardo da Vinci also invented one, of course, though as far as we know it was never built, and the first well documented flushing water closet was an English invention, made public, complete with working drawings, in 1596.
This was the brain-child of Sir John Harington, godson of Queen Elizabeth I and

High Sheriff of Somerset, described at length in his lavatorial satire ' A New Discourse of a Stale Subject, called the Metamorphosis of Ajax'. (Jakes being another of the many names for the privy).

Harington's closet was fed by an overhead cistern; it had a seat, a pan or stool pot, a flush-pipe and a valve or 'stopple', which meant that it could retain water in the 'sluice' in between flushes, to form a water-seal and prevent any foulness coming up from 'the vault'

A prototype was installed in his manor house at Kelston, near Bath, and another for the Queen in Richmond Palace, where a copy of 'Ajax' was chained to the wall hard by it. If water was scarce, advised the author, flushing 'once a day is enough ..... though twenty persons should use it .....'.

For a whole century or more, the 'Ajax' lavatory languished unknown and unappreciated by the great unwashed - just another isolated milestone along the rocky road of sanitation.

Then, among the various closets which began to emerge in the course of the 18th century, the type re-appeared. In 1775, Alexander Cummings, a Bond Street watchmaker, took out the first ever w.c. patent, on his 'valve closet'. This splendid device had the water-seal provided by an 'S' trap - 'having the stink-trap so constructed that its contents shall or may be emptied every time the closet is used' - an extremely important innovation.

Two years later, Samuel Prosser patented a closet with a primitive ballcock to control the flow of water into the pan, suggesting that his closet would be promoted by the good offices of 'different noblemen and gentlemen in the three kingdoms' who had evidently used it 'with satisfaction'.

The year after that, in 1778, Joseph Bramah, a cabinet maker, topped them both, improving the valve mechanism, and stealing Cummings' thunder with the first branded closet ever to be a significant commercial success. By 1797 he claimed to have sold 6,000 of the beasts, and the very word 'Bramah' came to be used as a general expression of excellence.

Bramah's excellence, however, was a relative virtue; the closets were often leaky and smelly, and they came expensive. So for those less flush with riches, there were cheaper, still less fragrant alternatives - the pan, the plug or plunger, and the long or short hopper.

The pan was, in fact, an earthenware basin set above a metal dish, which tipped its contents into a large iron container and according to Hellyer, was 'about the most insanitary closet in use'.

The plug (the type that Prosser favoured) was just that - a basin in which water and waste were retained by a plug pushed down behind the outlet. (The plug part looked rather like the ordinary sink plungers you can buy today). To flush it, you just pulled the plunger and unplugged the basin, both of which usually got fouled in the process. The hopper was only marginally better, consisting of a cone-shaped basin above a simple trap, activated by a spiral of water too feeble

to flush it properly, as a consequence of which, it was constantly dirty and often completely blocked.

H. A. J. Lamb in his 'Sanitation. A Historical Survey' employs admirable restraint in describing such contraptions as 'highly objectionable'. But in their defence, it has to be said that they were far more efficient - even hygienic - than anything that had gone before. The gentry customarily chose the pan, while servants were provided with hoppers - as if, writes Roy Palmer 'the excretory of the upper and lower classes differed'.

By the time of Waterloo, these devices were if not commonplace, at least familiar. They were important if only because they made lavatory hygiene feasible in everyman's home, and during succeeding decades, they gradually gained acceptance.

It was on the strength of making pottery for closets like these - including Bramahs - that Thomas Twyford founded his business, at the very time when events in the wider field of sanitation were about to make their use more widespread than ever before.

The pressure for improved sanitation was growing. Since 1832, cholera had been paying periodic visits to London, borne on the City's foetid water and rampaging through its overcrowded and unhealthy dwellings with devastating effect. In 1848-49, it was particularly virulent and spread across the entire country, killing 14,000 in the capital, and leaving more than 55,000 dead, nationwide. 'Society' as Wright puts it 'was at last scared into action'.

The conditions which fostered the disease were not hard to find. In 1842, in 'The General Report on the Sanitary Conditions of the Labouring Classes of Great Britain', the great Benthamite reformer Edwin Chadwick had described in all its sordid glory, the dismal state of sanitation in the world's leading industrial nation.

A commission of enquiry was established, and its conclusions led, in 1848, to the passing of the first Public Health Act, which among its provisions, encouraged the incorporation of fixed sanitary arrangements in all new houses. It was followed, in 1849, by the Nuisances Removal Act, which gave local authorities stronger powers to enforce better public hygiene. Legislation such as this helped pave the way for the manufacture of sanitaryware on a much larger scale, and whether by coincidence or design, Twyford was poised to seize the opportunity. He was in production, in earnest, before the year was out.

On the 23rd September, in that same year, 1849, his wife Sarah, gave birth to their first child - a son called Thomas William, who was to join the business and play an instrumental role in shaping the course of sanitary history.

For the moment, however, Thomas Twyford, the elder stood among the first rank of Bramah's successors. He was not a great theorist, as were some of his more notable contemporaries, but an innovative practical potter - and it was in this guise that he made his major contribution.

At first, the wares he made were of a very simple nature. His stock-in-trade was

the closet, for which he made various different basins. He also made washhand basins, either free-standing or built into elaborate washstands, as well as the characteristic violin-shaped bidets of the period, which were set into cabinets or four-legged stools.

His only non-sanitarywares were now wine and spirit barrels and beer engine handles, made for the licensed trade and the neighbouring Trent brewsters.

Within a very short time, Twyford was making sufficient ware to make him the largest producer in the locality, and one of only a handful of volume producers anywhere in the kingdom. As his expertise grew, he became increasingly involved with fellow pioneers who numbered among his customers.

He worked closely with George Jennings, one of the greatest of the bathroom frontiersmen, and made pottery for his and other makers' closets, improving the state of the art and developing new techniques as he went along.

These were yet early days, but what had been until then only a trickle of innovation was becoming a steady stream.

In 1845, Henry Doulton, cheered on by Chadwick, had opened a special factory in Lambeth to manufacture the new-fangled glazed stoneware pipes, which made sound drains a practical proposition.

At the same time, Edward Chrimes and others made significant strides in the development of the floating valve, to regulate the amount of water used per flush.

By 1850, the Metropolitan Board of Commissioners for Sewers had all but rid London of the worst of its reeking cess-pits, and just nine years later, Sir Joseph Bazalgette, Chief Engineer to the Metropolitan Board of Works, oversaw the start of an entirely new sewage network to replace the noisome vaults that went before.

Twyford, in the meantime, had been beavering away, building an increasingly substantial business. He was manufacturing in quantities previously unheard of, which nevertheless, were rapidly soaked up by a burgeoning market especially now that hot and cold running water was becoming a regular feature in most middle class households.

Throughout the 1860's, he was busy forging links in the newly expanding export trade, and as the new decade dawned, he could contemplate a product range which was selling well throughout Great Britain, France, Spain, Russia and even Australia.

The difficulties in handling and transportation that this new business involved were considerable. The Trent Mersey Canal had provided a link with the Port of Liverpool for more than 90 years, but the railway had not arrived in North Staffordshire until 1848, and thereafter had progressed only slowly, the first station not opening in Hanley until 1873.

Ocean crossings were, of course, very lengthy, and onward transportation, particularly in places like Australia, could still depend on the horse and cart. Nevertheless, English sanitary pottery also made its way to the United States, and at the time, Twyford was one of only four companies successfully engaged in this trade with an agent - a Mr. E. Aspinall - based in William Street, New York.

From this source, came a rather curious tribute to Thomas Twyford and his Staffordshire colleagues.

In 1847 a local pottery decorator, Thomas Maddock, had emigrated to America, and in the 1870's, opened a sanitary earthenware manufactory in Trenton, New Jersey. But such was the reputation of English pottery, that his genuine all-American products could not compete. The only way he could get plumbers and merchants to accept his wares was by stamping them with the imprint of the lion and unicorn fighting for the British Crown, and adding the legend: 'Best Stafford Earthenware made for the American Market'.

Sadly, in 1872, at the height of his success, Thomas Twyford fell ill and died. He was just 46 years old. The business fell briefly into the hands of Trustees, and was taken over by his eldest son, Thomas William.

His other three sons were entered at Newcastle High School, later to pursue careers of their own, and in the same year, Thomas William married Susannah, daughter of Mr. Edward Whittingham.

Along with his fellows among those early sanitarians, Twyford left a lasting legacy. He had by means of volume production, democratised the water closet, and helped widen its use as part of the general movement towards sanitary reform. When he had started in business, the water closet was the preserve of the privileged, relatively hygienic few. By the time of his death, comparatively healthy sanitation was becoming a real possibility for most of the population, and a reasonable water closet was now available to almost anyone who could raise the few shillings it cost to buy one.

CHAPTER FOUR

Going National

‘1870’ claimed Lawrence Wright, with justice, ‘was the annus mirabilis of the water closet’.

From then on, for some 30 years, there was a storm of invention, unprecedented and unrepeated since.

Hellyer had set the ball rolling that year with his ‘Optimus’, a valve closet, which at long last improved on the Bramah. This had the important addition of a flushing rim, which he had difficulty getting potters to make - a problem apparently resolved by the Twyfords, since they began making ‘Optimus’ bowls.

Both father and son, however, were growing disenchanted with a system where financially at least, the potter played second fiddle. While the brass and iron founder was making 20 and in some cases, up to 50 shillings for an appliance, the potter for making the bowl and trap often only received a mere 2 shillings. The Twyfords had determined to do something about it, when Thomas’ death intervened.

As Thomas William came to take up the reins, he was just 23 years old, exactly the age his father had been when he first opened Bath Street.

The business he took over was no longer a small family concern, but a sizeable enterprise, and along with the Works and the Twyfords mark (the Staffordshire Knot with T.T.H. - Thomas Twyford, Hanley - woven into it), Thomas William inherited the not inconsiderable problems which went with them.

The range of products had increased enormously, and the catalogue published in 1874, by Thomas Twyford’s Trustees, naturally reflected this.
As well as numerous different kinds of closets, sanitary basins and traps (even a portable w.c.) there were also various square and angular sinks, drinking fountains, individual wall urinals, and a magnificent augmented collection of wash-hand basins. These included beautiful fountain basins which were built into the wall and fed by a cascade of water; ‘cabinet stands’ for fitting into washstands, tip-up basins which emptied into an outer vessel like a second skin and plug basins for plumbing-in; many of which already had integral overflows.

In the developing export trade, a Mr. A. Rieman of the Zeiterstrasse, Leipzig, had been appointed as agent for Austria and Germany.

A London depot had been opened at St. Pancras Station, and by 1875, a second pottery, the ‘Abbey Works’, at Bucknall, Stoke-on-Trent, was already in production.

More than most people in the business at that time, the young Thomas William realised the immense potential that existed for a new wave of innovation in sanitaryware and the vast market it could open up.

Successive legislative acts in the 1860's, prompted by fresh outbreaks of cholera, had compelled local authorities to appoint sanitary inspectors, and provide reasonable means of refuse disposal, adequate sewers and fresh water supplies. Further impetus for improvements was given in 1871 by a near tragedy, when the Prince of Wales, the future King Edward VII, only narrowly survived an attack of typhoid (his father Prince Albert, having succumbed to the disease 10 years earlier).

Then in 1875, among a welter of reforms, from the Disraeli Government, fresh public health measures made it obligatory for all new houses to have a fixed sanitary appliance of some kind, be it water closet, privy or ash-pit.

But the problem of small returns still remained, and considering the amount of careful, craftsmanlike handwork each appliance demanded, it was a very real one. Amid all his other activities, Thomas William was grappling with this difficulty, when a completely new type of closet came to the public's attention.

This was Daniel Bostel's 'Excelsior', first exhibited in 1875, and the earliest known example of the 'wash-out' closet.

The wash-out was the ancestor of the closets we use today. It did away with the often insanitary Bramah-type 'valve at the bottom of the pan' and instead left a small amount of water after each flush, which was provided by a single gout of water. This meant a much cleaner pan, and coupled with the water in the trap, a much more hygienic seal.

As with practically every new closet, confusion reigns over who actually invented it. Jennings had been aiming in that direction. Hellyer claimed the idea was his, and in the light of subsequent events, Twyford may well have been working on the same lines himself. At any event, this was the technology that Twyford arrived at in achieving his more 'equitable' division of spoils and labour. Basically, what he needed was a closet that would provide more work for the potter and less for the foundryman, and the wash-out lent itself to this idea.

At about the time that Bostel was launching 'Excelsior' - the date is uncertain and may well have been somewhat later - Twyford took the wash-out principle and built it into a new patent closet of his own.

This was a side-outlet, combination wash-out closet and trap, which could be made in either one or two pieces with an 'S or a 'P' trap - and the most important thing from Twyford's point of view, it was all ceramic. Twyford, no doubt delighted at the possibility of redressing the balance between metal and pot, called the new appliance the 'National'.

It was a landmark in sanitary design and almost certainly, the most commercially successful closet of its kind. The 'National' seems to have been part of a planned expansion in the Twyfords range, for when the production model appeared in the

catalogue of 1879, it was accompanied by car hopper closets (for railway carriages), valve and pan closets complete with flushing apparatus, a collection of ceramic tiles, and a range of taps for ‘lavatory’ basins and baths. (The term lavatory for hand basin, was originally used in medieval times, and is here re-adopted by Twyford for the first time).

At first, the new closet got precisely nowhere, thanks largely to the innate ablutionary conservatism of the Victorian public.

Pioneers like Twyford had greatly improved the old unsavoury valves, pans and hoppers, and in the process, often did their own new models a great disservice.

(If the old-style closets were still less than ideal, they were at least familiar).

So in the first year of manufacturing his brave new invention, Thomas William sold only 50, and in the second year a meagre 200.

Nevertheless, it was then in 1881, that ‘this closet was awarded the highest honours at the International Medical and Sanitary Exhibition, South Kensington, London and also at the Sanitary Exhibition, Brighton.’
Two years later, Twyford introduced a new and improved version, with the supply placed opposite the outlet at the side of the bowl. (The outlet being placed ‘in such a manner that the great and offensive objection of looking into the soil pipe is now avoided’).

The new closet, which like its predecessor retained $1^{1}/_{2}$” of water in the basin ‘to receive the soil’, also benefited from the ‘new registered fan’. This improved the flush, and meant that with less than two gallons of water, the National was guaranteed to sweep all before it and thoroughly cleanse the pan - in those days an impressive feat.

It was rigorously tested, approved and ‘generally fitted’ in Her Majesty’s dockyards, barracks and military hospitals, and as if this were the ultimate hurdle, its sales soon went rocketing to 10,000 closets a year - and rising. By 1888, Twyford could claim that 100,000 Nationals were in daily use and the plaudits began to roll in.

The National was popular with the building trade, and as a contemporary advertisement modestly reveals was ‘recommended by leading architects and sanitary engineers, and pronounced by practical plumbers to be the simplest, cheapest and most effective closet they have ever fixed’. Actually, it cost a guinea for the least costly white two-piece, while the most expensive decorated one-piece was a healthy £2.

It was also well received by the medical profession and commented on by Dr. Robert Park of Glasgow in a letter to the ‘Lancet’ under the heading ‘Sanitation at the Sea Coast’. ‘Of wash-out closet basins, there are now several in vogue, but the best I have seen are those called National and Alliance, and a cheaper sort on the same principle called the Crown, which are exhibited at the Sanitary Exhibition here. They are being very generally adopted in Glasgow, Edinburgh, Dundee and other large towns and, in my opinion, are the very closets required

for coast and country residences'. They were all made by Twyfords.

The 'Alliance', which first appeared at the International Health Exhibition in South Kensington in 1884, was very similar to the National, except that it had a front outlet. It too had the registered fan, and a patent, after-flush chamber 'to ensure that the water seal was adequate and a full quantity of water left in the basin after it had been flushed'.

The 'Crown' circa. l882, was as good as the Doctor suggested, an economy model, made in two-pieces, fireclay, with the cheapest version in cane with a white glazed bowl, at a very reasonable 12 shillings. 'The flushing arrangements' intoned an advertisement 'are perfect' and the model was particularly recommended 'for use in factories, public works, barracks, etc., where a large number of workers are employed and a good strong basin is necessary'.

The 'National' was undoubtedly a great leap forward. In one fell swoop, it established Thomas William's reputation; took the potter out of the backroom and put him in the vanguard of sanitary reform as well as ensuring Twyfords place as a major force in the market. It also made the w.c. a much pleasanter, healthier, and more fragrant place for thousands upon thousands of people.

Of course, none of these things happened overnight. Old types of closet continued to exist side by side with the new (literally in most catalogues) - the Reverend Moule's Earth Closet being a particularly fine example.

Invented in 1860, this bizarre device flushed into a collecting bucket by means of a downrush of earth, ashes or charcoal. Twyford made an oval-bowled variant himself, and these and numerous others were still in use well into the 20th century.

In the Twyfords catalogue of 1883, the 'National' was accompanied not only by earth closets, but by the trapless variety, an improved though still rather grubby plunger, which Twyford helped Jennings develop.

Even Duckett's automatic slop closets continued to be popular, though they flushed with waste water from the sink via a pivoting 'tipper' and could easily splash the occupant. So too were the same firm's famous 'troughs', which sported a row of seating to accommodate up to eight people. (It was a favourite trick in certain London clubs and elsewhere, to sit 'upstream', drop in a lighted newspaper and await results!).

Inventions were now coming thick and fast; acceptance took a little more time.

The catalogue of 1883 was full of new patterns, colours and decorative motifs - in such abundance as for sheer extravagance, beggars the modern bathroom. Splendid porcelain enamelled baths vied with superbly decorated tip-up basins, which pivoted for emptying.

There were ship's lavatory basins with the new 'Atlantic Rim', forerunner of today's anti-splash rim, as well as a new range of sinks and slop sinks, some with fluted fronts, others especially designed for the butler's pantry.

Earthenware accessories such as mirror frames, soap, sponge and brush trays also made their appearance, along with new styles in commodes, bidets, chamber pots and ewers, which seemed to go on forever.

Pottery cisterns had not yet made their entrance, but for the first time, a high level cistern was shown in porcelain enamelled cast-iron, with fancy ‘ears’ for screwing to the wall.

Washbasins still had no built-in provision for taps (though by this time, some of the sinks had), but instead, their water supply was controlled by a valve on the main, directed through a hole in the back of the basin. The overflow was connected by a lead pipe to the waste, and both overflow and inlet were covered in this year’s models by a pottery ‘gargoyle’, in the shape of a shell or a lion’s head.

In this year, the American agent had moved to a smart new showroom in New York’s Pearl Street; the German agent had extended his franchise to include Switzerland and Holland, and had moved to Berlin, while a new agency had been established by Mr W.R.F.Hebbard, in Melbourne, Australia - all three being credited on the catalogue’s title page.

No sooner had this flush of innovation abated, however, than Twyford plunged in at the deep end again.

CHAPTER FIVE

The Beginning of Open Plumbing

In 1884, within months of launching the improved 'National', Thomas William received an intriguing enquiry through his agent in Paris.

It came from a French architect, known to have 'advanced' views on sanitary engineering, who wanted to know if Twyford could supply him with a closet basin which could be fixed open and exposed. That is, without the wooden surround which had previously been de rigeur for all WCs.

This was by no means as easy as it sounds. It was difficult enough to make closets in one-piece without the added headache of producing a highly finished, self-supporting integral stand - which is what the request amounted to. Together with the bowl and trap, this would make a very large piece of pottery indeed. With splendid self-assurance, though in fact he had no such closet, Twyford replied in the affirmative - presumably trusting to a little science, and a lot of pioneering spirit to see him through.

He worked out, very carefully, how he would do it, and set his draughtsmen to work to visualise his design, and prepare the working drawings. The result was a closet, which in theory at least, was just what the architect ordered. As if to bear that out, the Frenchman, who declared himself profoundly impressed, ordered some 700 closets for the large blocks of residential apartments he was building in Paris.

It was at this point that Twyford's troubles really began. The 'Unitas' was something quite new and revolutionary in WCs. It was one of the very first all-ceramic, one-piece pedestal wash-out closets. 'Pedestal' being the word to notice, since it was actually free-standing. As the French architect had requested, the entire appliance was fully exposed. No filth, nor anything causing offensive smells' could accumulate or escape detection, so there was no longer any need for the gruesome 'save-all tray' - and since all the joints and connections could be seen, any leaks could easily be spotted and repaired.

The 'Unitas' was startling in other ways, too, not least for its remarkable seat. This was carved from solid wood in mahogany, walnut or oak, and the clever part, of course, was that it was hinged - so it could be raised when gentlemen were using the closet as a urinal, or ladies employing it as a slop sink. It also gave freer access for cleaning and avoided 'the wetting so objectionable in permanent wooden seats' - which were the rule before. Behind the seat, incidentally, sat a beautiful, curving porcelain paper box, that was a work of art in itself.

In combination with Twyford's patent syphon cistern, with its economical 2-gallon flush, chain-pull-and-handle, the 'Unitas' proved to everyone's relief, to be an extremely effective closet. It had a front outlet, and from the plumber's point of view, it was a delight to fix, since it was fitted with yet another Twyfords patent, the 'India Rubber Connection'.

A minor star of the Dublin Sanitary Exhibition of 1884, this amounted to a small revolution in plumbing, as it connected basin to service pipe and ventilation socket to air pipe, without the need for crude, unhygienic wrappings, which up to then had been the order of the day.

The problems that occurred with the 'Unitas' did not arise from there being anything wrong with the concept, or for that matter the plumbing.
The problems lay with the pottery - in the nightmarish difficulties involved in being able to make it at all.

Not unnaturally, Twyfords workmen had never set eyes on a pedestal closet before, and they were dubious of manipulating the large and complex pieces of clay that would undoubtedly be called for. Being paid piece-work, they required, according to Harron, 'such a price as would cover all risks, real and imagined' - and even then, it was only with difficulty that one of their number was prevailed upon to attempt the task. The intrepid potter (unfortunately his name has not come down to us) made numerous attempts at producing the piece, and with Twyford's help, was ultimately successful.

It remained, however, a job for only the most skilled and experienced men; they were very well paid, and became something of an elite, soon earning double their previous wage.

Twyford was able to meet the French contract, and early the following year, the 'Unitas' was officially released to the trade. 'The ability of Twyfords to produce large items of sanitaryware in one piece' wrote Palmer 'was to revolutionise the industry'. But not quite yet.

Like the 'National', the 'Unitas' received a great deal of praise, but initially little in the way of sales. 'The Building News' of March 27th 1885 opined that the 'Unitas' united 'in a high degree, cleanliness, utility and simplicity' - a description later used in Twyfords advertisements - and at the Health Exhibition of 1886, it excited a great deal of favourable comment. Still nobody was queueing up to buy it.

Only two things, so the story goes, saved it from oblivion at the hands of 'the conservatism of old prejudice and false ideas of propriety'. One was the enthusiasm it evoked among the members of the medical profession, and the wide coverage they gave it in medical and associated journals.

The other was Queen Victoria. Until a clutch of Hellyer's 'Optimi' were installed at Buckingham Palace, she had suffered terribly from foul closets - one of which had actually emptied from a pipe outside her dressing room window. With this as a background, she had come to share the family's keen interest in the subject.
(Prince Albert had been fascinated by it, and Prince Edward once declared that if

he had not been a prince, he would have liked nothing better than to have been a plumber).
So she was delighted, when on a visit to Doncaster, she came across a ‘Unitas’ in the Angel Hotel - said to be the best WC. in town - and gave it, as it were, the royal blessing. Soon in patriotic fervour, the ladies of Doncaster were lining up to use the Angel’s closet and, according to legend, the ‘Unitas’ never looked back.

Gradually - whatever the real reasons behind it - the ‘Unitas’ did catch on, and became a great best seller.

It would be nice to think that science prevailed over sentiment. But probably one of the major deciding factors was that it was a beautiful thing in itself, almost majestic in its elegant, rather self-important styling. ‘Its appearance’ wrote Twyfords’ advertising writers, with unusual restraint, ‘is both artistic and pleasing’.

Originally, it was made in three versions - in plain fireclay for building works, in plain or patterned pottery, and with raised ornamentation in white or ivory. The last-named were the most splendid of all. The ‘Unitas’ in ‘Raised Oak’ had a blue-and-white floral bowl, while on the outside of the pedestal, an oak tree, with a full head of leaves and acorns, grew in relief. It was, in the words of Lucinda Lambton, ‘the Queen of Water Closets’.

Within a very few years, Twyford was able to claim that the ‘Unitas’ had outsold all comparable closets. More than any other basin, it had helped make the exposed pedestal closet acceptable and on this basic concept, all subsequent WCs. have been based.

Archibald H. Haddock in ‘Polished Earth’ neatly sums up the achievement: ‘The one improvement for which Thomas William Twyford deserves special credit was his design for the pedestal wash-out closet, the first practical all-earthenware water closet, and the first one which could be called a sanitary fixture... it was this closet that was the real beginning.

CHAPTER SIX

Cliffe Vale And The Fireclay Madness

It was 1886, Thomas William Twyford was 37 years old, and found himself with a problem that at some stage, all growing companies share. For the past five years, he had been rather too successful. Sales, helped along by the increasing popularity of the 'National', had more than doubled. The two potteries at Hanley and Bucknall were stretched to capacity, and it was clear that neither of them would be able to cope for very much longer. There was no room to extend the existing buildings, and no extra land available. So it was fast becoming imperative that a new site be found.

For the next two or three years, Twyford would spend much of his time doing little else but build. In the days of Sir Nicholas Twyford, Cliffe Vale had been part of a vast royal hunting forest called 'King's Park', skirted by Witton Wood. Over the centuries, the forest had all but disappeared, and the wood dwindled to a last few trees, which stood at Etruria on the hill leading up to Wolstanton.

Locally, these remnants were known as Etruria Woods, and it was close by them that Thomas William found what he considered to be the perfect site for a pottery. It consisted of some four and a quarter acres of usable land, and most important of all, it was supremely accessible - being bounded by the main road from Newcastle to Hanley, the Bridgewater Canal, and the North Staffordshire Railway Line. Twyford bought it from the railway company for just £4,000, and he could contemplate his purchase in the knowledge that it lay just a few hundred yards from the site of Joshua Twyford's original factory at Shelton.

Twyford had been around potteries all his life, and he had long wanted to build one. He knew from practical experience precisely what was needed, and in planning his factory, he worked out every building, its layout and contents himself.

But as well as strictly commercial considerations,' he had another aim in view. He was a kindly man, despite a rather frightening aspect and a gruff manner, and in the paternalistic way characteristic of many of the best Victorian industrialists, he was keenly concerned about his workers' wellbeing. For years, he'd seen potters struck down by a terrible industrial disease - known as potter's asthma or 'the potter's rot' - pneumoconiosis. Its major cause was the inhalation of fine, sharp particles of silica dust from the calcined flint that was used as a whitening agent in the earthenware body, and in older potteries, it was exacerbated by cramped, unhealthy conditions, and made worse by ill-planned working practices.

As a young man, Thomas William had resolved that if he was ever able to build a

new factory, he would do everything he could to reduce the toll taken by this crippling affliction - and now, at last he had the chance. His declared aim was to make the potters' workshops as healthy as their own homes, and to have any hope of achieving this he knew he would have to start by constructing a very different kind of building. It would have to be spacious, airy, well-insulated, and above all, well-ventilated.

The floors would be made of concrete to prevent the heat from stoves on the lower floors reaching men at work above. It would thus become feasible to keep the workshops relatively cool and at a more or less even temperature. Each man would have a window of his own; each window being designed so that it would let in fresh air, without admitting draughts.

Finally, all stoves would be steam-heated, and each stove fitted with its own ventilation shaft to draw away foul air and excess moisture.

With the help of the architects, Scrivener's, and the building contractor, Barlow, all this was done, the work starting in 1887. In total, it was to cost some £50,000 (at that time equal to the combined annual turnover of Bath Street and Bucknall). But when it was finished, it was as healthy a place to work in as the condition of the pottery industry and contemporary building techniques would allow.

There still remained the problem of working practices. In the old potteries, it was the custom before starting work for each man to clean that particular part of the shop where he was to spend his working day. The consequence was that if one man came in and did his cleaning earlier than another, the second man would stir up the dust all over again.

Imagine this repeated with routine job-to-job cleaning throughout the day, and you can easily picture the dusty pall that hung almost permanently in the air the men breathed.

Twyford tried his best to at least reduce the risk of 'rot' by attempting to keep the atmosphere purer. He insisted that the workshops be kept scrupulously clean, and employed a special team of labourers to come in every night after the potters had gone home to do the main job of cleaning and sweeping.

These men were made to wear respirators for their own protection, as a condition of employment, and all the windows and ventilators were opened each night, to help clear the dust for the next day's work.

Neither the building at Cliffe Vale, nor the system was ideal (pneumoconiosis was to be a persistent problem for at least another two generations), but for the time, it was remarkable enough to create a great deal of interest.

The factory inspectors gave it their approval, and held up the Works in general, and the systems of ventilation and sanitation in particular, as models of their kind. Government representatives, and even the Under-Secretary of State visited Cliffe Vale to see how its example could be applied elsewhere 'to the benefit of workmen generally', and this doubtless had its effect on legislation that was then

under discussion.
Certainly in the Factory and Workshops Bill of 1891, there were special notes on the conduct of dusty processes in dangerous trades - and these included the manufacture of pottery.

At Cliffe Vale, the potters' shops were over 110 feet long, 35 feet wide and nine feet high. In all, each man was allotted a space of 1700 cubic feet - a full four times more than he had been allowed under the old system.

As well as special pottery machinery, supplied by William Boulton of Burslem, there were initially six 'biscuit' and five 'glost' ovens, all at this date of the traditional 'bottle' type, built by three separate oven builders - Cartlidge, Dunn and Fenton.

The biscuit ovens were used for the first firing - to convert the clay pieces to pottery, or 'biscuit-ware'.

Each piece was then dipped in a tub of liquid glaze, and put into the glost oven for a second firing, which hardened the glaze and gave it a rich, glossy surface, that was virtually a coating of toughened glass.

The ovens were fired by coal, of which there was a plentiful supply in North Staffordshire, and the new Works could hardly have been better placed for the delivery of raw materials.

China clay and stone were shipped up from Cornwall in 1,000 ton loads, and picked up by canal boat at Runcorn, where it was stored in custom built sheds. Each boat carried 23 tons direct to Cliffe Vale, and discharged its cargo into bays built on the canal bank, adjacent to the clay preparation plant.

Other materials, such as flint and coal came by rail, straight to the nearby Cockshutt siding; the trucks were then shunted onto Twyford's own works line, which had been specially built for the purpose, and unloaded at or near the places where they were used.

Though there was still much work to be done, Cliffe Vale was in production within little more than a year of its foundation stone being laid. It quickly became home to another flood of new products, some interesting and significant new basins, and another extremely important new closet - all of which, as we will shortly discover, were included in the catalogue of 1889.

By by then, Thomas William Twyford was preoccupied with quite another subject - that of fireclay. For quite some while (certainly ever since his father's time), Twyford's potteries had been supplying articles in fireclay for situations where extremely robust appliances were needed. This had extended to quite large and complicated items, such as the fireclay version of the 'Unitas'.

Though it was not something that Staffordshire sanitary potters had ever seriously dealt with before (fireclay pieces shown in catalogues were usually bought in from elsewhere), Thomas William saw in it a useful material for extending the scope of his business particularly on the institutional and contract

side.

Fireclay was coarser than earthenware, but also much stronger and more resilient - which made it ideal, not only for certain types of closet, but for baths, sinks and urinals, and especially for big industrial vessels.

With the large new premises at Cliffe Vale newly in production, it seemed to Twyford an ideal time to test his fireclay theory. He would try to make some very large pieces, and see what happened.

Enamelled or glazed fireclay, which was what he would need for the articles he had in mind, was not the simplest of things to produce. For unpractised hands, it could be difficult to work, and it took a very long time to dry (a big piece could take four or five weeks before it was ready for a very slow firing). To make matters worse, because it was not material used on any scale in the Potteries (though there was plenty of it in the ground), there was nobody available to work it.

For the most part, fireclay was made in Scotland, Yorkshire and Worcestershire, where in 1850, Rufford of Stourbridge had won the Society of Arts prize, sponsored by the Prince Consort, for making the first modern, one-piece fireclay bath. So if he were to find skilled and experienced labour, it was to one of these places that Twyford must go.

In the end, his search took him to Scotland, and there he recruited a team of the most experienced fireclay potters he could find, and brought them down to Hanley. With their wives and families settled in cottages nearby, the men were installed in a part of the Cliffe Vale Works known long after as ‘the Scotch End’, and set to work.

The material Twyford wanted the potters to work, presented, in theory at least, no real problem. Though of local origin, it was not significantly different from the clays they had used at home for making porringers, bread dishes, milk pans, and various other domestic and culinary items.

What was going to be difficult (and troubled the newcomers, who thought that Twyford ought to have known better), was the sheer size of the pieces he wanted them to make.

Here was this crack-pot Englishman talking about pieces as large or larger than anything he had ever made in earthenware, or they in fireclay - multiple sinks, cisterns, and huge tanks of a size and weight hitherto unheard of. According to Hatton, this ‘staggered his new hands’ and was ‘the despair of his old ones’. But Twyford was not a man easily dissuaded, and determined to go ahead.

In the event, the materials they were to use turned out to be almost as much of a problem as the size of the vessels. In the first place, the right clay was not easy to find. Many were tested. Some contained too much alkali and were unable to withstand the fire. Others had too great a percentage of silica, which meant they would not take the enamel. Some simply had too many impurities, while yet others were shot through with iron oxide which caused discolouration.

As well as the clay, the enamel proved difficult, too, and took a great deal of ‘fruitless experiment’ before a suitable solution was arrived at.
The question of firing the large pieces was less tractable. They could be fired all right but it was a case of hit and miss, and some time elapsed before they were able to achieve an economic success rate.

The enterprise cost Twyford a great deal of time, heartache and money, but with the stout optimism of his kind, he never appears to have doubted its ultimate success for a minute.

Hatton wove an engaging tale to illustrate the point, where the Scottish foreman of the new department arrived in Thomas William’s office, wearing his Sunday best. The man declared himself unable to continue taking his employer’s money under what he considered to be false pretences. Neither, in his opinion, did he think Twyford should go on with the venture. The upshot being that he and his colleagues were going home to Scotland, forthwith. Twyford told him ‘it will be time enough for you to think of giving up, when you are told to put your jacket on’ - and with that, ‘this honest soul’ as Hatton called him, returned to his work.

Whether there was ever a proposed exodus or not, as one difficulty after another cropped up, there were many who thought Twyford was mad. Yet in the end he succeeded, and was able to turn local clays into sanitaryware of enormous size and strength, whose colour and smoothness, it was said, approached that of porcelain.

At the close of 1890, Twyfords were manufacturing porcelain enamelled fireclay goods in earnest - the first time this had ever been done on any scale in Staffordshire.

A ‘Cliffe Vale Fireclay’ catalogue was published, with an initial range that included large sinks and washtubs; slab and semi-circular urinals, long latrines and Twyford’s own version of the dreaded trough closet - all flushed by a new automatic cistern, which had been introduced the year before.

It was, nevertheless, to take another five or six years of ‘unremitting toil’ to get it absolutely right, and even then, with the variability of the materials, the size of the goods, and what was effectively a new process, there was still no guarantee that what went into the kiln would come out good.

Despite the problems it caused Twyford, the preparation of fireclay was less elaborate than that of earthenware, among other things, there being fewer constituents in the body.

The ‘pulverised’ clay was pressed in the mould (casting came later), and was finished by hand, by the potter. A coating or ’slip’ of enamel was added (this was similar in content to a diluted form of the white earthenware body), and the piece allowed to dry. Glaze was applied to ware ‘green’ (unfired). Then the pieces were carefully stacked in a ‘muffle’ kiln, where they were protected from the direct action of the fire. Fireclay was given just one long, gradual firing - as opposed to earthenware’s two - with the heat building in intensity over what could often be a

fortnight or more.

So as you can imagine, a bad failure could be a minor disaster; weeks of work could go up in smoke, along with a substantial amount of money. By 1894, however, things were beginning to run a little more smoothly, and in the new catalogue for that year, Twyford was able to launch a greatly increased range of fireclay goods.

As well as the usual WCs., washtubs, slop-hoppers and sinks, far more exotic items were featured, such as tobacco preserving tubs, pasting slabs and pickling troughs.

There were separate bedpan and urinal bottle sinks, and no less than eight different kinds of fireclay bath - one of which filled through a special ‘roll-rim’. This acted as a hot-water collar and helped keep the whole bath at an ‘equable’ temperature.

Indirectly, even the royal family was to benefit, for a range of the latest 36” washtubs was supplied to the Queen’s laundry in Richmond, for the’ private linen’ department.

But perhaps most astonishing of all these beautifully crafted pieces, were the urinals, which were growing more splendid with each passing year. One in particular, was a minor masterpiece. Called the ‘Island’ urinal, it comprised a unit of six stalls arranged in a full circle - in the middle of which was a glass-sided automatic cistern, that you could stand and watch as it emptied and filled.

Thereafter, and throughout the 1890’s, Twyford was able to fulfill his original aim, as the size of the vessels it was possible to produce grew larger and larger.

Massive 400 gallon storage tanks, some seven feet long, were soon being made on a regular basis, and at the Laundry Exhibition of 1896, one was shown which held a colossal 500 gallons. At the time, it created a sensation, but still larger vessels were to come. In 1898, the ‘Stafford’ fireclay triple vegetable sink was among the award winners at the Sanitary Institute Exhibition in Birmingham and, in the following year, came another influx of fresh designs.

Lavatories specially made for convicts were added to the range, along with the legendary Cliffe Vale ‘Sitz’ bath, where the bather could sit on a stool, and wash in comfort, with the help of a douche, ‘back-wave’ and spray.

There were cryptic ‘special appliances for operating rooms’, and finally, as it were, a magnificent post-mortem table, which revolved!

During their first ten years in production, Twyfords fireclay products became a commonplace in all kinds of public buildings and institutions, as well as in the home. They were found in schools, barracks, hospitals, asylums, prisons, and even - a sad sign of the times - in the workhouse.

At last, in 1899, the rather sonorous name they had originally been given ‘Cliffe Vale Porcelain Enamelled Fireclay’ was changed to the now renowned trademark

‘Adamant’. In the light of Thomas William’s determination to get the project off the ground, it must have seemed eminently suitable. In the end, his madness had paid off, handsomely.

CHAPTER SEVEN

The Deluge And After

Somehow, amid the chaos of building Cliffe Vale and establishing the fireclay, Twyford managed to continue the work of new product development. The 1889 catalogue was published as the new Works was coming on stream, with the mortar barely dry.

Yet it was nevertheless a very significant one, and ushered in the final frenetic decade of 'the Golden Age', when all but a few of the sanitary devices we know today were created in one long burst of invention.

Open the pages of this and succeeding catalogues almost at random, and you will nearly always find a new pattern, some important new design or improvement that has come down to us, with only the styling substantially changed.

For Twyford this was the year of the 'Deluge'. Since the early days of the 'National', the wash-out, in one form or another, had become the dominant WC (in some parts of the world, it still is). But in 1884, just as Thomas William had perfected the 'Unitas' a completely new type hove into view, when Humpherson's of Chelsea introduced the 'Beaufort' - as far as we know, the first wash-down WC.

The wash-down is the closet that most of us in the Western world are familiar with. As its name perhaps suggests, it works on 'the Niagara principle' - like a waterfall. The flush falls directly from the cistern and gushes down the sides of the pan to sweep away the soil and clean the bowl by sheer force of water. This was the system which Twyford was to improve and help popularise with the 'Deluge', created while Cliffe Vale was still being built.

Physically, the new closet looked not unlike a slightly more rounded, streamlined version of the 'Unitas' (that is, it was a pedestal closet, with a straight, rather than a cut-away front), but technically it was quite different. Made in one or two pieces, in earthenware or fireclay, the 'Deluge', had the refinement of a special new trap with a 3" equal bore, and this, in combination with a 2" water seal and the patent after flush chamber, made it one of the cleanest flushers you could buy.

For the moment, however, the wash-out was king, and more new closets were added to the range. Notable among these newcomers were the 'Tornado', an economy pedestal wash-out 'suitable for artisan's dwellings'; the 'Undine', a square-topped model with beautiful raised ornamentation, and the 'Thorncliffe' - a new departure with a 'box flushing rim', where the water was directed through a series of small holes, the better to clean the sides of the bowl on flushing.

There was also the inscrutable new 'Oriental', a violin-shaped pedestal basin with

a shallow front bowl and a deeper one at the rear - ‘for use in Oriental countries in conformity with the religious observance of the natives’.

Curiously, none of these closets had built-in seat fittings. Instead seats were fixed to the wall by elaborate metal brackets, often with the name of the product worked into the design. Some of the cheaper models had no seats at all to speak of, but instead had ‘Insertas’ - which were simply pads of hardwood fixed to the basin rim.

Practically all of them, however, came with the option of another of Twyford’s small revolutions - the pottery cased cistern, in earthenware or fireclay (as opposed to wood or plain metal), which could be decorated to match the closet.

1889 was also the year for significant evolution in the wash-hand basin. With the ‘Cardinal’, Twyford introduced tapholes for the first time, and with the standing waste and overflow, provided an alternative to the plug and chain. The ‘Ideal’ went one better, featuring an integral overflow chamber, instead of an outlet requiring a separate connection. This was highly glazed to prevent dirt adhering, and it had an opening lid so you could clean it. With its ornamental front and sides, the ‘Ideal’ could also be secured by wall brackets, without the usual woodwork or a metal frame - one of the earliest basins where this was the case.

In the late 20th century, in Britain, Europe and North America, we use mainly two types of water closet. One, as we have seen, is the washdown. The other is the syphonic. As long ago as 1870, John Randall Mann had patented the syphonic system, which basically involves a sucking action as well as the downpour of flushing. (Water from the cistern charges the water in the trap, which creates a syphonic motion and whisks the soil away).

Mann’s concept had come to nothing and its various successors, all with multiple flushpipes, were too complicated and unreliable to make any headway. But just four years after the ‘Deluge’, Twyford came up with an answer to the problem, and created the ‘Twycliffe’, the first really effective single trap syphonic.

Almost simultaneously, Jennings developed ‘The Closet of the Century’, the first double trap syphonic - and both were launched in 1894.

The ‘Twycliffe’ was by far the simpler of the two for while the best modern syphonics employ the double trap, Jennings’ closet had the disadvantage of a very long trappage, part of which had to be fixed under the floor. Twyford’s closet on the other hand, required only an ordinary three-gallon cistern and one flush pipe, so it was much easier to fix. The syphonic action was created by the shape of the trap and the rush of water through the rim and side jets. This was balanced by a seven inch depth of water in the basin and a three and a half inch water seal in the trap, which remained after flushing. The consequence was that no smells could emanate, nor matter accumulate, and at the same time, the flush was quick and remarkably quiet.

In the same year, Twyford launched his ‘modern’ bidet - a world away from those his father had made, which had remained virtually unchanged since they were first invented in early 18th century France.

This new one was a superbly made, decorated pedestal bidet, still violin-shaped, but much more like a shallow, sloping lavatory bowl. Like the latest washbasins, it had hot and cold taps as a standard fixture, a standing waste and overflow, a mahogany seat, a flushing rim, and most luxurious of all, an early progenitor of the now familiar ascending spray.

Since before the launch of the improved 'National', Twyford had been working in close cooperation with Mr Thomas Crapper of Chelsea, the great pioneer of 'the Valveless Water Waste Preventer' (also known as the 'Valveless Syphon') - the device which ushered in the modern cistern.

With Crapper's help, he had been able to develop patent syphon' cisterns of his own, which he supplied in tandem with closets, en suite. (Each Christmas, he showed his gratitude by sending Crapper, his nephew and his Works Managing Director, a 60 lb chest of tea!).

The Twyfords cisterns, in the common practice of the time, were high level cisterns, now encased in pottery - but standing seven feet above the ground. In 1894 - a busy year - Twyford brought them down to earth a little, with his first 'low level' cistern, sited just over the closet (similar models are still in most manufacturers' ranges). They were called 'Convenient Combinations', and were also available with the cistern encased in mahogany, fixed to the back of the closet, so they looked 'close-coupled'.

In 1899, he took the idea a stage further, and launched the 'Ideal Convenient Combination' - which really was 'close-coupled' with no lengthy flushpipe - where for the first time, a pottery cistern is fixed to the back of the closet, and this is of course, still the basic style for the most modern WC suites. (Interestingly, it was accompanied in the catalogue by another seemingly very modern idea, a fireclay washdown called the 'Console', which had the distinction of being Twyfords first wall-hung WC. - a re-invention of a concept originally patented on a valve closet, by James Viney, in 1824).

With an immense range of closets now available, Twyford turned his attention to the question of materials. Hitherto, it had proved difficult to produce sanitaryware with an attractive appearance, which would still be completely non-absorbent without a glaze. Yet this was clearly a desirable thing to do, in case the ware was damaged, or the glaze in any way faulty. (There was also a problem with the elaborately decorated ware of the period, that the glaze might vary considerably in thickness or not cover every part of the appliance).

After some experiment, Twyford managed to formulate a material which fitted the bill exactly, and in the 1899 catalogue was able to include a limited number of items made from it. It was called 'Vitrina Ware'. It was 'pleasingly artistic', completely impermeable and apparently by no means expensive to produce.

At first, however, it was offered only as an alternative. One of the earliest 'Vitrina Ware' closets was the 1899 'Axis', which was also available in earthenware, fireclay or caneware, and had a special trap that could be fixed at any angle. For the next four or five years, Twyford gradually increased the presence of 'Vitrina Ware' in the range, and then decided to re-launch it - but this time, as a proven

material.
In the interval, he had developed a heavy duty version - called ‘Vitrina Ironstone’ - and in 1904, sample glazed and unglazed closets were sent to London for independent testing.

The unglazed models were shown to have remained impervious, after seven days in water. The glazed models remained uncracked and uncrazed, after lengthy immersion in alkali and acid.

From January 1905 onwards, closets previously made in earthenware would now be produced in ‘Vitrina Ware’, while those formerly in fireclay would be made in ‘Vitrina Ironstone’.

By now all the basic types of water closet to be invented had been invented. In just 30 years, the world had moved on from the valve to the syphon. There were, of course, many improvements, many refinements still to come. The bathroom would yet change beyond all recognition, and so would the techniques of producing the appliances to equip it.

But the closets the better-off were using in the early 1900’s were fundamentally the same as we all use today - and one closet in particular graphically demonstrates that fact. In 1905, Twyfords luanched a new syphonic ‘Vitrina Ware’ closet called the ‘Centaur’. This was basically a development of the ‘Twycliffe’ and differed from it very little. It, too, was a single trap syphonic, which combined the pan-cleaning flush of the wash-down, with the soil-removing sucking motion of the syphonic. But it was just that much more efficient, and guaranteed to work with any standard two-gallon cistern of reliable make.

Twyfords offered the ‘Centaur’ to the trade in a wide range of options, starting at the keenly priced 25 shillings for the Plain White, and ascending to much pricier models suitable for ‘private establishments of the highest class’.

He also offered them a simple basin to test on one month’s free trial. If they were not satisfied, they could return it, at no cost, and he would pay the carriage. ‘We do not, however’ added the great man portentously, ‘expect any such course to be necessary’

He was, of course, quite right, the ‘Centaur’ proved to be one of the most successful Twyfords closets ever, and its technical excellence was, until just recently, rarely exceeded.

With the catalogue number 3333 and with only the styling changed, it was still being made and sold in large numbers in 1982 - 77 years later.

CHAPTER EIGHT

Twentieth Century Apogee

Britain came sweeping into the 20th century on the crest of a wave. Three years earlier, Queen Victoria had celebrated her Diamond Jubilee - which a banner in Lillywhite's sporting goods store had called 'Her Most Gracious Majesty's Glorious Innings - 60 Not Out'. She was now in her 81st year, and reigned over an Empire that with 387 million inhabitants, stretched to the farthest corner of the earth, and a country that with skill and resource, had dominated the worlds industry and commerce for approaching two generations.

As Britons everywhere celebrated the dawn of a new era, Thomas William Twyford could contemplate his own enterprise with some satisfaction. Apart from the significant contribution he had already given to sanitary science, he had made a greater success of his father's business than in the early days, either of them would have ever dreamed possible.

His own social standing and personal prosperity had increased accordingly, and in 1898, he had moved from Moor House, Biddulph, to the altogether more splendid Whitmore Hall, in Newcastle-under-Lyme - the ancestral home of the Mainwaring family, 'a spacious and beautiful house, standing amidst delightful timber'. He had become a pillar of local society, a multiple office holder and a major figure in the life of the community, and although he continued to style himself 'T.W.Twyford, Potter', his son, Harold, was now 'H.Twyford, Gentleman'.

Business was booming. For nearly three decades, Thomas William had guided its always steady, and often quite dramatic progress; he had introduced a staggering variety of new and innovative products, and seen his sales both at home and abroad, increase more than five-fold.

All that had happened in the past ten or twelve years since the building of Cliffe Vale had only served to confirm Twyfords' reputation and its place in the industry, and if all concerned approached the beginning of the new century with a strong sense of optimism, it was scarcely surprising.

The firm was now on a different footing. Four years before, Twyford had decided to make his family business a limited liability company, and in the distribution of its shares, was able to recognise the work of its principal employees, who over the years had helped him manage the business and develop the product range. At first there were to be only three directors - Thomas William Twyford himself, his son Harold, and his Commercial Manager, Walter Weir.

But there were to be another six subscribers. These were Weir' s assistant, William Noake; the Company Secretary, George Boreham, three Potters' Managers - Alfred Martin, Thomas Holland and George Couper - and one J. Tait, a commercial traveller from Wolstanton. (George Couper, a big, heavily

moustachioed, brown-bowlered man, who was said to have been quite a character, was one of the potters who had come down from Scotland to help establish the fireclay).

In making his announcement, Twyford had written: 'I trust that the support so generously bestowed upon myself and my late father for the past half-century will now be extended to Twyfords Limited' - and generally speaking, it was.

In 1901, to mark the start of the new age, the 'Twentieth Century Catalogue' was published. It was a wonderfully ornate, heavily bound, immensely colourful document, and it brought together all the advances that had been made in the busy last years of the 19th century. Emblazoned on the title page were now the names of eleven showrooms, from Glasgow to Sydney, Berlin to Cape Town - and for the first time ever, discreetly tucked away in a corner, there was a telephone number: 'National No. 45'.

Inside, the Twyfords unconditional guarantee was reiterated, as it had been every year since its issue in 1893. To whit, if the goods were found to be less than 'of the first quality', they would be replaced completely free of charge. 'We do this' it said 'because we recognise the great annoyance caused by goods not being up to the standard of catalogue representation.

Of all the historic Twyfords catalogues, perhaps more than any other, the 'Twentieth Century Catalogue' marks a great watershed in sanitary design. Here in its much embellished pages, the Victorians' love of display and decoration reaches its apogee in the bathroom. The richness and variety of the appliances shown is in itself remarkable, but together with a wild abundance of surface designs and decorations, the effect is truly staggering. Yet so far from being grotesque or unpleasantly ostentatious, the vast majority of these pieces are superb. Fanciful, certainly, but in their way, quite beautiful - almost as much works of art, as of sanitary science.

In 1901, Twyfords could boast in excess of 30 different trade marks and, by special order, customers could have their name or monogram incorporated in the ware. In closets alone, there were more than 20 different models, in over 100 variations of function, colour and design - not to mention a vast range of individual closet basins and separate cisterns, and 11 different kinds of pull. But this amounted to only about a third of the catalogue's 120 - plus pages. Developments in baths and basins had been nowhere near so dramatic and far-reaching as those which had taken place in the closet. But there had been a gradual evolution nonetheless, and in the 'Twentieth Century Catalogue' it was well represented.

Running water, as we have seen, first reached the bedroom in the 1870's, so from then on, the basin could start to become a fixture. This was, however, a slow process and it certainly did not stop either the basin or the washstand from being often outrageously ornate.

In 1901, while the tip-up and particularly fountain basins were still popular, the flat-topped, one-piece modern style had by now come to stay.

The pedestal basin had also recently made its appearance, and all these pieces, usually with upstanding backs and sides, were offered in a bewildering variety of patterns.

Each, be it a wreath of leaves, a floral spray or even a panoramic landscape, would be painstakingly prepared, applied by hand to the biscuit ware, glazed, then fired to a vibrant gloss finish.

But wares such as these were positively restrained when compared to the accompanying cabinet stands. Washstands, mostly in hardwood, slate and marble, had always been elaborate, but with the advent of cast-iron, they reached new heights, and took fresh flights of fancy. The princess of the washstands was undoubtedly the ‘Athena’, particularly in its quadrangular form, where it had four of everything.

Four basins, each held aloft by a flying cherub; four pairs of taps; four mirrors mounted lantern-style on a central column and four overhanging lamps, each with an acid-etched glass shade.

The story was much the same for baths. Both porcelain enamelled fireclay and enamelled cast-iron were now available (the latter introduced in the 1880’s), with a drag-handle, bogey wheels and solid rubber tyres. For a trade price of just £15, you could buy a superb cabinet bath, set in a hardwood surround with a marble splash-back, or for upwards of £35, a magnificent canopy or hooded bath. This comprised an enamelled plunge bath, shower surround, needle sprays, back-wave and overhead douche - all controlled by the bather, through a series of nickel plated, solid brass taps.

For those with simpler tastes, there were simpler showers, some with circular curtain rails and others with the option of a special frame like a climbing apparatus which incorporated side-sprays.

Practically all the taps and fittings were now made by Twyfords, and no longer bought in - plant which had been laid down by the directors some time before, having come into production in 1900.

Here, as elsewhere, the range was immense, including not only every conceivable kind of mixer and tap, but handsome accessories to cater for the bather’s every need.

So having fitted your bath with a recessed standing waste, with pillar taps and a hidden supply feeding-in through nickel-plated tubes at the back of the tub, you could concentrate on the strategic positioning of your carafe and glass holder, or the combined toothbrush rack and jewel cup’.

Even the more down-to-earth, institutional side of the business - as important then as now - had reached new levels of splendour and variety in its hard-working range of products.

There were dough troughs for bakers, mangers and hay troughs for livestock and sinks for every imaginable purpose, equipped with all manner of washing

apparatus, including jets for cleaning urine bottles and complete flushing cisterns.
But as ever, it was the urinals which stole the show. Available in massive, curving, slabbed ranges, these came in superb marbled colours such as Rouge Royal, St. Ann's Blue, Silver Grey and Sage Green, usually with white backs and always with cisterns to match. Best of all, was the huge, hexagonal 'Adamant' which could accommodate six in comfort, beneath the blind gaze of the little tower, like a cupola, on top. Put this or a similar range inside an exquisite fretworked cast-iron circular screen, like a pagoda or pavilion, perhaps topped off with an elegant lamp post and a louvered glass roof, and you would undoubtedly have the best public way of spending a penny that money could buy.

Sadly, it was all not to last much longer. On the 22nd January 1901, the Victorian Age came to an abrupt end when the Queen-Empress died, going down, as one of her numerous sons-in-law described it, 'like a great three-decker ship sinking'. Her son Edward VII, survived her by only nine years, and by the time of his death in 1910, styles had changed almost beyond recognition. The new generation brought with it a more austere, functional approach to design, and the 1911 catalogue appears in stark contrast to its illustrious predecessor. In these brief few years the elaborate ornamentation of one age had given way to the plainer, more rounded designs of another, embellished only by the more restrained devices of roll-edges and gentle fluting. Closet-styling was now clean and uncluttered; hand-basins were more discreet on simple pedestals, or inset, some with integral tables for toilet requisites.

Practical seat-lugs were fitted to WCs to accommodate the 'modern', though still wooden hinged seat - and gone were the extravagant brackets. The basins all had taps, and even the shells and lion's head gargoyles had finally disappeared. Decoration was still offered for earthenware, but it was now down to lining and gilding (albeit in genuine burnished gold), flower patterns, and one-colour border prints. It was discontinued for fireclay altogether, and soon lack of demand was to extinguish it for earthenware too.

Though it seems a pity to have lost the glories of Victorian sanitaryware, the 'modern' style was, from the functional point of view, unquestionably an improvement. It was less likely to become soiled, and easier to keep clean, and in a more general sense, it reflected a change in attitude.

The bathroom, as such, was now becoming a reality. For the past 40 years or so, depending on wealth and social standing, it had been a vast custom-built room, a converted bedroom or part of one, or a corner in the living quarters. Now, the 'special' room was not only becoming firmly established, but was spreading down the social scale.

Technical developments also came along to reinforce the change in style. The traditional method of making sanitaryware was by pressing prepared clay into moulds made of plaster of Paris (calcined gypsum) - the secret of making these moulds having arrived in the country from France in the mid-l8th century. Sanitaryware could not easily be cast as smaller pieces of pottery could because the casting thickness necessary for larger items could not be achieved with ordinary clay-water slip. However, a revolutionary change was now occurring.

It had been discovered that by adding various chemical salts, slip could be made with the fluidity and casting properties required to cast sizeable pieces. This method had been used in Germany in 1905, and arrived in Britain about a year later. The now very liquid slip could be piped to the potter's bench, where it was poured into the mould.

The plaster absorbed most of the water, leaving the shape of the pattern in clay in the mould. After partial drying, it was ready for 'fettling' - the final hand-working prior to firing and glazing. This change had a profound effect on both production methods and design. With pressing, a good potter could make maybe six or eight pieces a day; by casting, he could make 15, possibly 20, depending on the patterns he was making. Casting was thus in theory a much less costly process - though many potters opposed it, fearing that they would lose their jobs.

To the designer, on the other hand, it was an undiluted blessing. Appliances could be cast in solid section in one-piece, as opposed to a number of pieces. They could also now be easily cast in hollow box-sections, to assist the design or add strength. The body of a syphonic WC. for instance, could be made solid in one-piece; the box rim cast separately, and the two pieces brought together. (This still happens today, and most modern washbasins have some solid, some hollow sections).

It took time for casting to take over and pressing was not finally phased out until the early 1920's. But it nevertheless contributed towards more straightforward design - many of the old patterns would simply be too complicated and time consuming to make for a potter casting numerous different pieces in a day. Equally, it gave the designers more freedom to explore new avenues, and to that extent made changes inevitable.

As the bathroom became more widespread, it also became smaller. The difference between large and small new houses increasingly becoming the number of bathrooms, and not their size. Cost, fashion and the simple practicalities of plumbing all led towards this same end. As the bathroom got smaller and more economical, it became feasible for more new houses to have one, and so slowly, it grew to be the norm. (This process was still going on in the 1980's with the refurbishing of older houses).

With improved domestic sanitation, people expected better facilities in the public domain - in public buildings and institutions - and so the sanitarian found himself in the happy position of having both sides of his business grow at once.

For Twyfords, this first made itself felt in fireclay. Over a period of 20 years, this material had made considerable advances, pioneered to a great extent by Twyfords. In urinals, especially, it had all but made iron and slate obsolete, having been adopted in conveniences as far afield as Rothesay Pier and the Zoological Gardens in Dusseldorf. But by 1910, it was clear that the call not just for urinals, but for all kinds of fireclay articles, would soon be outpacing the company's capacity to produce it.

This problem (clearly the kind of problem to have) had been exacerbated by two notable developments. It had first appeared on the horizon soon after the launch of the automatic flush cistern for urinals some years before, which had created a sustained upsurge in demand. It had then become pressing in the past year or two, with the general growth in sales, and the launch of 'Snowite' vitreous enamel. (This was a relatively unsung, but important new development - and much purer in colour, smoother and more lustrous than previous enamels, and at the same time, stronger and more resilient. So not surprisingly it had proved extremely saleable).

By the beginning of 1911, things had got to the stage where something had to be done. The fireclay operation had not changed substantially since the original potters had arrived hot-foot from Scotland. It still occupied the 'Scotch End', but while they had had difficulty in making fireclay baths in those days, they now regularly held 1,000 in stock. Twyford decided that the time had come for a completely separate fireclay works, and fortunately, he had a suitable site ready and waiting, one some $3^{1}/_{2}$ acres of land, directly opposite Cliffe Vale. There the new pottery was built, and it was completed and running before the year was out. For reasons best known to the potters, it was promptly dubbed 'the Klondyke' - though why, nobody seems to know. The great Canadian goldrush had actually occurred some 15 years before! 'The Klondyke' solved the fireclay problem, but by 1912 a similarly pressing one had occurred in the production of earthenware.

Despite newly increased capacity Cliffe Vale was rapidly becoming unable to meet its order commitments. Twyford had been looking for a convenient site for some time, preferably with existing buildings and in the nick of time, he found one. It consisted of 5 acres in Garner Street, Etruria - less than a mile from Cliffe Vale. Some years before this had been the winter quarters for Barnum and Bailey's famous circus, the brain-child of Phineas T. Barnum, the great American impresario. Barnum was the man whose legendary showmanship launched General Tom Thumb, Jumbo the Elephant, and the World's Fattest Lady, and for years afterwards, residents could recall his Wild West Show being rehearsed, when a covered wagon would race into the arena pursued by painted and whooping red Indians!

The upshot being that there were a number of large buildings still standing. These were long, low single storey structures, with large double coach-house doors ideal for conversion. These were speedily made into gleaming new potters' shops and warehouses - and a series of coal-fired biscuit and glost bottle ovens were completed soon after. The first sanitaryware was produced that year, where the animals' stalls had once stood. For a long time, the pottery was never referred to by its employees as anything but 'Barnum's' or 'the B Works', and only much later was the name eventually changed to the more respectable 'Etruria Pottery' or E Works'.
After its first year in production, prospects could not have looked brighter - turnover had risen considerably, and by the end of 1913 had reached an all time high. But by then, war clouds were looming, and in a few months time in far-off Sarajevo, the Archduke's assassination would spark the descent into conflagration. It would be a long and tragic time before things were set so fair again.

CHAPTER NINE

An Era Ends

As the civilised world plunged headlong into prolonged and profoundly uncivilised conflict, an inevitable lull fell over those industries not directly involved in contributing to the war effort or the nation's day-to-day supply.

The potteries were no exception, and as the Staffordshire 'Sentinel' of August 5th announced the declaration of war with its biggest headline ever, Twyfords was among the many companies already drawing in the horns of production. The newly operational Etruria Pottery' was closed down completely and output at Cliffe Vale was severely curtailed.

Many potters and other workmen flocked to follow Lord Kitchener's injunction and joined the armed forces, and in this, they were actively encouraged by T.W.Twyford, who was now Honorary Colonel of the North Staffordshire Battalion, and a leading figure in the recruiting campaign for the Territorial and New armies that were being raised in the early days of the conflict.

In the first years of the war, turnover plummeted. By 1915, it had dropped by more than half, and when the accounts were done for that year, it became apparent that sales were down to a level lower than any since 1892. Fortunately, just as the Company's financial situation was beginning to look a little black, an added source of income came to the rescue, and output started to creep back up again.

In the end, what made all the difference to the struggling factories was war work. Twyfords was given a number of very timely Government contracts and invited to provide sanitary fixtures for Government buildings, barracks, hospitals, convalescent homes and asylums, and to send overseas. The war had taken the sales away; now it was giving some of them back again and it was this work that was to see the company through to the armistice.

In 1917, by which time the figures were starting to look respectable again, the auditors found that very nearly 80% of total sales were for government work.

The Great War also affected Twyfords in a very different way - behind, as it were, the German lines. Thomas William Twyford had always been a keen advocate of fiscal reform. It distressed him that while Britain was a dyed-in-the-wool free trader, other countries were not, so his goods were subject to import duties. This was particularly troublesome in the German market - which had been a valuable one for Twyfords - but where in the early 1900's tariff barriers had suddenly been erected against sanitaryware. Not being one to complain, when he could do something about a problem, Twyford decided to leap-frog the customs by setting up a fireclay works on German soil.

Preparations were made throughout 1902, and towards the end of 1903, a factory was duly opened at Ratingen, near Dusseldorf. (At about the same time or more probably, a little later - Alfred Johnson opened a works at Wessel, and Johnson of Staffordshire, one at Florsheim).

On New Year's Day, 1904, the first German catalogue was published. It featured a range very similar and very nearly as wide, as that produced in England, and in the foreword, Twyford grandly assured his potential new customers that in compiling the catalogue, he had considered not only the sanitary requirements of palaces, mansions, and country houses, but also those of rest homes, public conveniences and army barracks!

This catholic approach paid dividends, and for the next 10 years, the Ratingen factory was a marked success, trading not only in Germany, but in most European markets. Production costs proved to be significantly lower in Germany, and Twyford used to say - only partly tongue-in-cheek - that with the absence of British import duties, he could make ware in Ratingen, ship it to England, and sell it for a lower price than he could make it for at Cliffe Vale!

With the outbreak of war, the German Government sequestered 'enemy' property, and since Twyfords factory clearly qualified as such, it was taken over (as were the British-owned potteries in Wesel and Florsheim). The staff had known that this was in the air, and many managed to get back to England before hostilities began. Others unfortunately, did not.

One of Twyford's nephews, who was a manager at the factory, was among those who escaped. On reaching home, he joined the army, but sadly, was killed in action soon after.

Those who were left were taken straight from the factory through the streets of Dusseldorf to a prisoner-of-war camp, where they were kept for the duration. Among those interned was William Couper, another of the Scottish fireclay potters, and brother of George. Mercifully, the wives and children were sent back to England.

There is a story, told by one who ought to know, that the Germans agreed to pay compensation for taking over the Works, and that in 1916, this was sent secretly across the Dutch frontier in the form of a train-wagon load of gold. The story is stoutly denied, however, by another source, although certainly by the conditions of the Treaty of Versailles, the Germans were required to pay compensation for sequestered allied assets (but not necessarily to return them to their original owners).

Such seems to have been the case with Twyfords factory, and there is some evidence that part of a rather poor settlement was made in kind - one of the commodities received in lieu of payment, being plaster of Paris.

In March 1917, the three British Works were brought together on the establishment of the independent Keramag ceramic company, which had its headquarters in Meiningen, and combined British, French and German interests - and there for Twyfords the chapter ends.

At 5 a.m. on November 11th, 1918, the Armistice was signed in Marshal Foch's railway carriage in the Forest of Compiegne, and at 11 o'clock that morning, the war came to an end. Britain's total casualties amounted to more than one third of her armies, and of the many men from Twyfords who had served in the conflict, 52 lost their lives. Their names are recorded on the roll of honour, which was unveiled by Thomas William's daughter, Dora Twyford, in 1923, and which still hangs in the main entrance at Cliffe Vale.

The task of re-establishing the company on a peace-time footing began immediately. The business was re-floated as a public company, with an authorised capital of 350,000 ordinary shares of £1 each. Thomas William Twyford became Chairman and J.T.Webster was appointed Managing Director, the other directors now being Harold Twyford, E.H.Bailey, and Edgar E. Lamb, a Birmingham stockbroker. A.C.Bourner, of Bourner, Bullock & Co., Twyfords accountants, also joined the Board, with George Boreham remaining as Company Secretary.

The major problem was now to try and accommodate the men returning home. The armies were being demobilised more quickly than industry could adjust. (There was then no orderly system of 'demobbing' and no guarantee of a man's pre-war job being available to him when he returned to civil life). Twyford was anxious to re-employ his men, and found work for them as fast as he could.

Fortunately, 1919 was a reasonably good year financially, and turnover was once more back at pre-war levels. But the picture was by no means entirely rosy. In the first years after the war, the demand for sanitaryware greatly exceeded the manufacturers' ability to supply. There were coal shortages and a lack of certain kinds of skilled labour, as a consequence of which, Cliffe Vale was for some time operating at considerably below capacity.

Towards the end of 1919, the situation began to improve a little, but it was not until the summer of 1920 that restrictions on coal supplies were lifted, and only in the second half of the year that output was substantially increased. In October 1920, it was at last possible to re-open Etruria after six long years of closure, with all that meant in terms of renewed jobs and increased output.

But the upturn was not to last. Early the next year, the market, which had seemed so buoyant took a dip. There was a distinct lull in demand, and throughout industry, the post-war recession bit home. Though few realised it at the time, it was the beginning of the end of Britain's Victorian economy, and the end of an era.

That year also marked the end of an era for Twyfords. Since before the war, Thomas William's health had been less than robust, and after the appointment of J.T.Webster as Managing Director, though still much involved in the business, he was able to take a less active role. Occasionally, he went away to London or the coast for a rest and a change of scenery, and in the wake of an illness in 1921, had gone with his wife Susannah and his daughter, Dora, to stay at the Chine Hotel, Boscombe, near Bournemouth.

There, on the night of Monday, 21st March, quietly, in his sleep, he died. He was 71 years old.
His body was brought back to Staffordshire and was buried the following Saturday, in Whitmore Churchyard - the cortege being led by Mr Beresford, for many years, the butler at Whitmore Hall.

Thomas William Twyford's obituaries fill a substantial tome, for in the words of one of them, he was 'a prominent, picturesque, and forcible figure'. The picture he presents is one of a big man, tall, with an upright military bearing. According to those who knew him, he could be abrupt, peremptory, even harsh - but was also capable of showing great kindness and humour. Dressed in an old coat, he could be seen striding through the Works to check the next batch of 'slip', or altercating with the firemen about the state of the kilns.

He was also, in a way that was peculiarly Victorian, a man of many parts. When the Liberal Party split over the question of Home Rule, Twyford stood with the Unionists. He founded the Unionist newspaper, the 'Staffordshire Post', and was Chairman of the 'Sentinel', with which it later amalgamated.

He became the leader of the North Staffordshire Conservative Party, and in the 1907 elections, stood as its Parliamentary candidate. He also served as a magistrate, was High Sheriff of Staffordshire in 1906, and a Deputy Lieutenant of the County. His interests were legion.

Along with his daughter, Dora, (they were very close and she was for many years, his confidante), he was involved in numerous different charities. He was an enthusiastic supporter of the Red Cross; President of the Newcastle Cripples Guild, of the Soldiers and Sailors Help Society, and the Hanley Infants and Mothers Welfare Centre, for which he found a home in the empty Bath Street Works. One Twyford veteran can remember his small sister being taken to the free clinic there, suffering from rickets.

His activities were not confined, however, to business, politics and good works. He was President of the North Staffordshire Choral Society, and an avid collector of pre-Wedgwood Staffordshire pottery, of which there were examples in virtually every room at the Hall. (The Twyford Collection, one of the finest of its kind, is now held in Stoke City Museum).

While at Whitmore, he enjoyed the life of the country gentlemen. He was President of the Staffordshire Agricultural Society, a heavy horse fancier, organised shoots and field trials, and bred terriers and gundogs. His 'Biddulph' fox terriers were a household name in the dog world, and of his labrador retrievers, both 'Patron' and 'Tag of Whitmore' were field trials champions.

He also enjoyed the company of his many notable friends - among them, Sir Henry Irving; the Harrisons of the Harrison shipping line; Prince Nicholas of Nassau; Dr Kempthorne, Lord Bishop of Lichfield - to whom he jovially referred as 'our little Bishop' - and Grand Duke Michael of Russia, on whose recommendation Twyford was awarded the 'Order of St Ann of Russia' by the Tsar.

But above all, of course, he was a pioneering sanitary potter, and one of immense significance in his field. By the time of his death, Twyfords was probably the biggest company of sanitaryware manufacturers in the world. His appliances were in use not only in Great Britain, but all over Europe, Scandinavia, North and South America, Africa, Australasia, the Middle East, and even China.

His name, as 'The British Clayworker' put it, 'must be familiar to every observant traveller in almost every part of the globe', and in Russia, as Adrian Room points out in his 'Dictionary of Trade Names and Origins', the very word for lavatory bowl is unitaz' from the Twyfords WC.

In the middle years of the 19th century, the steady march of sanitary improvement was reflected in a dramatic decrease in the death rate (particularly in the 1870's and 80's).

'Among the means which conduce to a steady enlargement in our chances of life' reflected the publication 'Health' in July 1885 'the improvement of our household conveniences may be ranked in the first place, and the name of Mr Thomas Twyford of Hanley mentioned as that of an inventor and patentee of sanitary appliances, which are calculated to enable us to carry out sorely needed reforms in our houses, cheaply, satisfactorily, and with the minimum of disturbance to existing arrangements.'

'The improvements he introduced' wrote the 'Times', 'revolutionised the equipment of houses, hotels, and public institutions'.

In a mere 30 years from 1870 to 1900, he and his kind changed forever our view of sanitary hygiene, and everything that has been achieved in this area since has been based largely upon their work.

'Those who remember the old, dirty enamelled iron pan' concluded J.C.Wedgwood in his 'Staffordshire Pottery and its History' 'will recognise the debt sanitary science owes to Thomas Twyford'.

CHAPTER TEN

Interregnum

Though Thomas William Twyford was such a powerful figure in the history of the Company, and though he would be sorely missed, his passing did not, as you might expect, leave a vacuum.

He had long known that his son, Major Harold Twyford, would not follow him into the business, and he had made suitable alternative plans. Harold Twyford had had a hard time of it in the trenches in France, and he had frankly had enough. He had a substantial income, and he had lived the life of the sporting squire. He was not now going to launch into a career in the pottery, with which he had never been involved at a routine, executive level.

He was in Africa, big-game hunting when his father died, and though he remained active as a director of the Company, he took no further part in the day-to-day running of the business. At the end of each Board Meeting, he would always ask if anyone had prepared the flint chippings for his pheasants.

Dora had been far more enthusiastic about the Company than her brother, but as a woman, at the time and in the circumstances, she could no more than be an interested outsider - and having done many good works in her life, she died, prematurely, a few years after her father.

The men Twyford had in mind for the succession were by no means newcomers to the Company. At his death, James Thomas Webster and Ernest Henry Bailey, had already been with Twyfords for a combined total of 35 years. For the next quarter of a century they were to guide the business through the trials and tribulations of the troubled inter-war years and beyond.

J.T.Webster was, in the opinion of all who came across him, a remarkable man. He was born in Bahia (now Salvador) Brazil, in 1874, but barely three weeks later, his father, who had an engineering works there, was killed in an industrial accident, and the boy James was brought up in Scotland by his mother and his father's brother, who later married.

Educated at Robert Gordon's College in Aberdeen, Webster became a partner in an electrical business, and first moved to England as Business Manager of the Simplex Company in Birmingham, which made metal conduit for electrical installations. It was through this family-owned business that he met his wife, who was born in Mussorie, India, in 1878, one of the daughters of General Havelock's chaplain. (Her eldest sister was the first British baby born in Lucknow after the Indian Mutiny in 1857).

After some disagreement, he resigned his job and moved on to a new project, as manager of the Guild of Handicraft, the co-operative of artists and craftsmen

founded by C.R.Ashbee in Chipping Camden, Gloucestershire, based on the ideas of William Morris. There, his brief was to attempt to put the Guild on a more profitable footing - but though he was a man who combined business acumen with great aesthetic understanding, after little more than a year, he was beginning to conclude that it was just not possible. It was then that he was invited by T.W.Twyford to join him as his personal assistant, which he did in 1908.

'A motor will be at the station to meet you (I may be in it)', wrote Twyford, arranging an interview. It was one of the very first motor cars in Staffordshire. Subsequently, in 1913, J.T.Webster was made a director and then, as we have seen, Managing Director, from the Company going public in 1919.

E.H.Bailey could not have been more different from J.T.Webster if Twyford had planned it that way, and perhaps he had. Born and bred in the Potteries, Bailey's career took him straight from school to Twyfords, where in 1899, at the age of 14, he got his first job as an office boy and general factotum. Gradually, he acquired a wide knowledge of the administrative side of the business, and via numerous promotions came to hold a variety of jobs in home-sales and management, before finally becoming a director, after 20 years service.

His business and his home (he was married, with one daughter), were almost his sole preoccupations - apart from golf, which at one time, most pottery directors seem to have played - and he amassed a vast knowledge of the industry, playing a major part in the activities of the various trade associations over a period of some 30 years.

Unlike Messrs. Twyford and Webster, he was a small man, universally referred to as 'Little Bailey' - but he was also noted for his wide-ranging abilities, his quick intelligence and acute judgement.

T.W.Twyford had been very provident - and the Company fortunate - in his choice of these two very able men, for the period through which they were to lead Twyfords was one of succeeding slump and recession. The fact that it not only survived, but actually grew and prospered, is a tribute to their considerable talents.

No sooner had J.T.Webster become Chairman - also retaining his title of Managing Director - than he was immediately faced with a serious problem. With the old, coal-fired bottle ovens, it took a huge amount of coal to produce a relatively small amount of ware, and in the Spring of 1921, trouble broke out in the coalfields. There was a prolonged and painful miners' strike and as a direct result, Twyfords pottery production came practically to a standstill for a period of thirteen hungry weeks.

In that blazing hot summer, most of the employees had to be 'laid-off' or put on short-time working - 'even the office staff', as one of them recalled with horror. (There were to be soup-kitchens opened in Hanley that year, and 'a hot-pot fund' was founded). J.T.Webster had no taste for short-time working, and the company loaned the potters money to see them through.

It also made use of the time and available labour to improve the plant and take advantage of the hoped-for upswing, when the troubles were over. Cliffe Vale was completely overhauled, and a sizeable investment was devoted to extensions and improvements at Etruria, which made it the most up-to-date, healthy and well laid-out sanitaryware works in the entire country.

But though it was to pay dividends in the end, for the moment, it was to little avail. 1922 saw demand falling and the factories working once more at below capacity.

It also ushered in the beginning of an abiding if intermittent trend, that was to prove characteristic of this extremely competitive era. To stimulate sales, prices were cut dramatically - far more than was warranted by recent reductions in manufacturing costs - and other producers did the same. This price-war was eventually to get out of hand, and E.H.Bailey would be among those instrumental in establishing sensible price guidelines for the industry. Nevertheless, in the early 1920's, price-cutting worked. Trade improved and output increased - helped along by a rash of exports prompted by the 1923 pottery operatives strike in the USA.

The small additional 'S' Works was built at Etruria - the 'S' stood for 'specials' - and for the next two years, there was full-time working. Profits rallied, accommodating rising fuel and wage costs, without any increase in prices. (In fact, in certain markets, there was continued price-cutting to combat foreign competition).

Then, in 1926, the Company's progress came to a sudden shuddering halt, with the General Strike, and another long agonising stoppage in the coal industry. The miners could hardly be blamed - they were striking not for more pay, but against a reduction in pay for longer hours - but the effect was crushing. The strike lasted nearly seven months, brought misery to the coal-men and disruption and worse to many businesses.

Twyfords weathered it remarkably well, though compelled at one point to use coal bought at exorbitant prices, as an alternative to closing down altogether.

Despite the gloom, however, the company pressed ahead with further extensions and developments in the potteries, which had been started the year before - and when the stoppage was finally over, they began to pay off. Prudent management had put Twyfords in a strong position, with substantial reserves, and using an accumulated backlog of orders as a platform, it was able to launch into a period of brief, but surprising prosperity, when in other companies and areas, the effects of the strike carried over.

Foreign competition on the home front and consequent price-trimming increased (it was now happening between British manufacturers too, and the Board appealed for wiser councils) - but otherwise, things got progressively better financially, up to 1929-30, which for Twyfords, was an all time record year. Unfortunately, by January 1930, it was fast becoming apparent that current good fortune was not to last. The previous October, 13 million shares were traded on the New York Stock Exchange; Wall Street crashed, and in the ensuing panic, the

economics of the western world were engulfed by the ‘Great Depression’. World trade in manufactured goods, which had only just re-attained its 1913 level, plunged again by a third. Twyfords could not escape.

The Company’s investments and securities held up well, but profits for 1930-31 almost exactly mirrored world trade, and fell by more than 30%. There was short-time working for the first time in a number of years, and on this occasion, the slump was so widespread that exports, which had helped the Company through earlier crises, could no longer be relied upon.

In a wage dispute in July 1931, it was decided, via a special arbitration panel, that there should be ‘a helpful reduction’ in wage rates in the potteries of 10% ‘to restore prosperity to the industry’, and at Twyfords, first the directors, and then the senior management and staff, took a similar percentage cut.

The fall continued throughout 1931-32, but despite ‘a serious shrinkage’ in foreign trade, the Company still managed reasonable returns, and by 1933 had started to claw back.

Relief came in the form of a much-needed acceleration in the building trade, particularly in new housing schemes, and by 1934-35, the company was again trading at the high levels of 1929.

It was during the Twenties and Thirties that the foundations of Twyfords far-seeing welfare policies were laid. Like Twyford, Webster cared a great deal about the welfare of his workforce (he always knew everyone in the Works, and often their families, by name). But unlike his predecessor, he felt it was important to make provision for employees less of a personal matter and more of a corporate concern.

From the building of Cliffe Vale onwards, working conditions had been a primary consideration at Twyfords, it being the Company’s belief that healthy and efficient conditions were most likely to be complementary, not contradictory. Thus health had been a major factor in the 1921 redevelopment of Etruria, as it was in all subsequent projects - and this was apparent to all who came to the Works.

The directors felt, however, that it was time the concept of welfare was extended beyond the potteries, to help improve the total working environment, and in some measure, to secure employees’ future prospects. In 1923-24, this became a matter of policy. 1924 saw the building of a Works canteen - one of the first in the Potteries - which replaced the cookhouse where old Polly Byrne had fried the men’s bacon and eggs.

Provision was made there for dances and concerts, table tennis and badminton, and that year, the first organised works football and cricket teams were formed. (J.T.Webster, along with most of the workforce, was a keen Stoke City supporter; and he had also played cricket at county level for both Aberdeen and Staffordshire).

In strike-torn 1926, it became apparent that these facilities had had a positive

effect on the Company's relations with its workforce, and the Board decided that it was time to begin to build up a fund to provide pensions and 'other financial assistance' for employees. Thereafter, substantial sums were regularly invested in the scheme.

Contributions were also made to the North Staffordshire Royal Infirmary, to supplement regular subscriptions paid by staff and workpeople towards medical and surgical help, as and when they should need it. Then in 1937, employees were able to take their first ever paid holidays.

By that time, however, J.T.Webster had already retired from his post as Managing Director, a decision he determined to put into effect in the early part of 1935. He had by than reached the age of 60 and the year before, had resigned his position as President of the British Pottery Manufacturers Federation. He was asked by Twyfords to retain the post of Chairman - which he did - though for family reasons, the Websters moved from their beautiful home at Shallowford House near Seighford, Staffordshire to London (to 44 Lowndes Square, near the Royal Academy and the leading galleries - fine art having been a life-long interest).

E.H.Bailey now became Managing Director, having been deputy M.D. in all but name for some years - whilst J.R.T.Hay, who had replaced George Boreham as Company Secretary and subsequently become a director, was appointed Commercial Manager - the new unofficial number two.

On giving up his day-to-day executive duties, J.T.Webster left the Company a good deal more robust than in the circumstances, it had any right to be. Despite the effects of the worst slump in history, Twyfords had continued to move forward. Its product range was stronger, its profits more substantial, and its workforce with more full-time working, better pay and conditions than most in the Potteries. Twyfords had maintained and extended its position as the leader in its own particular branch of the pottery industry.

'I think' reflected J.T.Webster 'that we cannot but count ourselves among the fortunate ones.'

CHAPTER ELEVEN

Riding The Storm

Twyfords' ability to ride the economic storms of the 1920s and 30s can be attributed to a number of factors. To begin with, the Company was already strong and well-provided for when the troubles started, and this position was enhanced by cautious investment.

But relative financial security, improved potteries and plant, do not in themselves sell products. The fact that in all but the very worst years, Twyfords capacity was swallowed up by markets both at home and abroad, was due in large part to the recognised quality of the wares, and the Company's sound, and improving relationship with the trade.

T.W.Twyford had been as strict about quality as he had been about most things, and it undoubtedly helped save the day in the face of price cutting and increasing costs.

In the two years before his death, the range had been strengthened in this respect - first in 1919, with the introduction of 'Duramant' heavyweight earthenware, and secondly, in 1921, with the launch of 'Vitromant' to replace the standard Cliffe Vale earthenware. 'Vitromant' was extremely fine, fired at very high temperatures to a hard, high glaze; 'Duramant' was similar, but much thicker and though far lighter than 'Adamant' fireclay, extremely strong. These materials were to carry Twyfords through to the 1950's.

In the 1920's, styles had changed very little. The plain, white ware, rounded lines and roll-edges which were popular in 1911, still prevailed. But the bathroom itself was growing more sophisticated. There were now paired washbasins, combined washbasins and toilet tables, and an increasingly wide range of luxurious fireclay baths, complete with every imaginable bathroom and boudoir fitting.

At the 1924 British Empire Exhibition at Wembley, behind a Moorish-style gateway iridescent with lustre tiles, fountains and arcaded walls, Twyfords stand showed 'the suite de-luxe', resplendent with 'pottery-clad' accessories, a shower bath, and a toilet table equipped with a winged mirror, cupboard and fitted glass shelves - absolutely, as one reviewer wrote 'the last detail in convenience'.

Come the 1930's, fashions did finally change, and the 'Jazz Age' reached the bathroom. The new style - almost 'Art Deco' - went for sharp, straight edges, triangular facets, moulded lines and 'cut' corners.

Cast-iron made a come-back in the form of elegant curving legs for basins, 'Duramant' make-up tables and even baby baths.

People were beginning to see the smallest and second smallest rooms, as

important features of the home, no longer mere utilities, and this was reflected in another significant change.

For the first time since the old Victorian decorative designs, colour was made available once more - and in some profusion. Not only solid self-colours (Lavender, Jade Green, Coral, Amber, Old Ivory and Black were just some of them), but colour with white - black basins and white bowls - and white ware, the edges of which were lined with black.

It was also at this time that one of the last great breakthroughs in closets was made - thus far. It began in 1932, with the 'Type 87 Vitromant Silent', one of the very first one-piece double-trap syphonics flushed by a low level cistern. Designed by A. Victor Pimble (Technical Designs Manager and later a Twyfords Director), the '87' had a small-bore air-pipe which connected a chamber between the two traps to the flushbend. When the cistern was flushed, water poured through the bend, and air from the chamber was forced out through the pipe - reducing the air pressure between the traps to create a partial vacuum, and set up a powerful syphonic action, which continued until the pressure was equalised, and the cistern empty.

With an anti-foul, box-flushing rim and a large water area, 'Type 87 Silent' was extremely clean, and as its name suggests, unusually quiet. It was shown in the 1935 catalogue, and in the next few years created such a reputation for itself that when Churchill moved into No.10, a number of these suites were installed. For his convenience, however, they had to have one minor modification - they were supplied without seats. Churchill liked neither hinged seats, nor insertas, nor boards, preferring to perch on the plain porcelain!

But the 'Type 87' was only the first stage. Six years later in 1938, Pimble's design team developed the definitive double-trap syphonic - the 'Unitas Silent' or Number 133. The new 'Unitas' needed no flushbend because it was close-coupled, and no air pipe because it brought with it an entirely new method of flush induction. The secret was 'the bullet' or pressure-reducing fitment, which fitted directly between the cistern and the chamber, and split the flush to create 'a wall of water' effect, an outrush of air, and an even more powerful sucking-action.

Reputed to be able to sink three unpunctured ping-pong balls at a flush, this system, the patent for which ran out only in 1960, is still in use in syphonic suites today. With its relative lack of splash, it remains the quietest, most effective and hygienic closet there is.

The method of close-coupling, first used by Twyfords in the 1890's, and here incorporated in a washdown (131), and a single trap syphonic (132), was in itself remarkable. The overall height was now down to a mere 32 inches, so the closet could fit under windows and in cramped spaces. Having no flushbend added to the notable quietness of the syphonic, there being less far for the water to fall, and since the basin and its bolt-on cistern were self-standing, the suite was very easy to fit. There were no cistern supports to screw to the wall, and in the case of new buildings, no risk of pipe fractures through settlement.

For some years it had been Company policy to supply products only through the trade, and from the beginning of the 1920's, as more and more merchants took to displaying sanitaryware products, local Twyfords showrooms, such as Glasgow and Leeds were closed. Sole sale arrangements were common in several areas, and close ties were kept with the merchants to make sure that stocks were always available at strategic points all over the country. These were then serviced by an experienced team of 'travellers'.

The Twyfords man in those days was quite a celebrity; he travelled by train, not by car, and on one famous occasion, Cohn Ecclestone Snr., the representative for Ireland, was met at the station by a gig, and was then taken from account to account by pony and trap.

The London office, necessarily, was retained, moving over the next dozen years from Southampton Row to High Holborn and Kingsway, managed first by Albert Fance and then by Don S.Nalder. Famous for his 'Anthony Eden' hats, Nalder was still hard at work in the 1960's, when he was admitted to the Worshipful Company of Plumbers, and given the Freedom of the City of London for his services to export.

London office traded both locally and internationally serving not only the metropolis, but the many overseas buying houses and export merchants based there, with the help of one of the first GPO teleprinters.

(One Twyfords shelf lavatory sold to a certain South American merchant's, was discovered 18 months after leaving the pottery, installed in a rest house high in the Andes, which could only be reached by pack mule).

At various periods during the years before the Depression, as much as 60% of Twyfords output was sold overseas - and though recovery was slow, it continued to be a very substantial slice of the business. The same basic appliances, which could be seen in Windsor Castle, Buckingham and Kensington Palaces, the Mansion House and the Guildhall, could also be found in British Embassies all over the world; in the magnificent Canadian Bank of Commerce building in Toronto, the Wellington Hospital in New Zealand, a power station in Montevideo, and a number of hotels in Shanghai!

Those countries that were not supplied direct from England, were serviced by a network of sole buying agents, such as the firm of J & G Davis, which represented Twyfords in Brussels for over one hundred years - since Frank Davis met T.W.Twyford on a train traveling from Brussels to London. (Captain Jack Davis MBE died in 1980 in his 99th year. He had been personally associated with Twyfords for more than 80 years, and when visiting England used to stay with T.W.Twyford at Whitmore Hall).

Where there were no independent commission or sole buying agents, there were the Company's own export trade representatives - one of the most well known of whom was Walter Walker, a fluent linguist who was first in Nice, then Paris, and eventually was to travel to South Africa, and all over Canada and South America.

Walter, whose father George Walker was editor of the 'Sentinel', and who had

worked for Twyfords since leaving school, suffered from a chest complaint, and was convinced that T.W. Twyford had sent him to the Riviera as much for his health, as for business.

Nevertheless, armed with one solitary closet, a feather duster, and a plumber named Louis, he eventually overcame the temptation to come home for lack of business and signed up most of the big hotels on the Nice sea-front.

For the first two or three years of E.H.Bailey's tenure as Managing Director, it looked as if Twyfords could only go from strength to strength. The brass finishing shop was completely up-dated, and in 1936, a large new five-storey warehouse was built, which though no great architectural beauty, replaced an old corrugated iron packing shed, and improved 'facilities for prompt despatch'.

Despite another bout of price-cuts reducing margins, profits rose steadily; a significant increase in wages was negotiated; home sales were stable, even buoyant, and exports, in difficult times, were doing well to hold their own.

But with Hitler moving into the Rhineland, it was becoming abundantly clear, that trouble was brewing in Europe, and a certain anxiousness returned to the markets. The 'war' with imported and cheap goods hotted-up to such an extent that by 1938-39, certain earthenware items were being sold at below cost. Australia imposed a two year ban on imports and New Zealand slapped import regulations on 'foreign' goods which halved Twyfords trade there, at a stroke. Factors such as these caused profits to level off, and then finally to dip steeply, as developments in the political arena fast overshadowed them.

In 1938, German troops marched into Austria, and events took an alarming turn. The following autumn came the crisis in Munich, and in March 1939, Czechoslovakia became a vasal State of the Nazi empire.
National Defence Contributions made new charges on Twyfords revenues from 1938, and in his next Chairman's Statement, J.T. Webster assured shareholders that 'every encouragement' was being given to employees to take up national service, and financial assistance provided for Territorials in camp.

Within months of the war, several thousand pounds were set aside for air-raid shelters and an A.R.P. service. Then on September 3rd 1939, Britain and France declared war on Germany.

The effect on industry was predictably drastic, and very nearly immediate. Raw materials suddenly became extremely difficult to find; special licences were needed for chemicals, timber and all kinds of metal, and 'making do' became the order of the day. Potters remember making earthenware syphons and float-balls because of the intractable problems involved in getting them in any numbers in metal.

As in the First War, profits dived, this time going down by one third, and a third again, before levelling out in 1941-42. It was in the second year of the war, as for most people, that reality struck home in earnest - and for Twyfords it began with some dramatic changes in management.

W. T. ‘Crusty’ Cross, Export Sales Manager and holder of the M.C., led the exodus to join the armed forces. In 1941, he was followed by J. R. T. Hay, who re-joined the Royal Artillery, in which he had served in World War I. F. D. Maitland Wright, who had succeeded Hay as Company Secretary also joined up, along with younger men such as Norman Richards and Reg Hancock, who were later to become directors, and a large number of the workforce. In fact, so many people went off to war that other companies in the Potteries wondered if there would be anyone but E. H. Bailey left to run Twyfords!

Sadly, and coincidentally, it was also in 1940, that ill-health finally forced J. T. Webster to give up the Chairmanship, and this now devolved to E. H. Bailey, to add to his duties as Managing Director. To assist him, Len Beardmore remained as Production Manager, while Colin Dewsberry, who had been with the Company for many years, was appointed to the Board.

As if to underline the fact that Britain was indisputably at war, the Etruria gasworks was bombed and set ablaze, incendiaries were also dropped on ‘E’ Works, and a 500lb bomb, one of a salvo of four was dropped on the ‘Klondyke’. No great damage was done to the Works or its personnel, but a number of nearby houses were destroyed, and tragically, many of their occupants with them.

As the routine of wartime settled in, production on the one hand was restricted by Government controls, particularly on fuel and labour; on the other hand, it was boosted by official orders.

There was nevertheless an enormous decline overall. The whole of ‘Etruria’ and the little ‘S-Works’ were eventually shut down, leaving only the Fireclay and Cliffe Vale still functioning in a very limited fashion. Literally, hundreds of patterns were withdrawn, and throughout the war, this process continued, with every three patterns being replaced by one.

Some rather strange, specifically war-time projects took over small corners of the Works, such as the manufacture of eye-douching equipment for the emergency services and air-raid shelters, and often, the demand for sanitaryware for barracks, aerodromes, hospitals and bomb-damage replacement exceeded the potteries’ now very limited capacity to supply.

As his parting job during 1940, J.R.T.Hay had made sure that all the available warehousing was filled to the gunwhales with plain, white utility ware. When he returned after the war, those same warehouses were empty.

E.H.Bailey’s hands were not entirely tied, however. There was a war-time prohibition on expenditure for the maintenance and improvement of property, plant and machinery - but nothing to prevent him from using monies this released to set up a reserve fund for post-war reconstruction, in anticipation of the boom it was thought would surely follow conflict. In this he was enthusiastically supported by Harold Twyford, and in 1941, a five figure sum was set aside for the purpose.

It was Major Harold’s last service for the Company, for shortly afterwards, after

more than 45 years service as a director, he died - the last of the line.

The reconstruction fund continued, however. 1942 was a reasonably good year financially, and another considerable sum went into the kitty, as it was to do so for the remaining years of the war. Substantial amounts of money were also drafted for the Pensions and Benevolent Fund, which was now supplemented by employees' voluntary contributions - and from this, financial help was given to the families of all those Twyfords' men serving in the fighting forces.

On May 9th 1945, the German surrender, signed by General Jodl two days earlier, was ratified in Berlin, and four months later, on September 2nd, it was followed by the formal capitulation of the Japanese aboard the U.S. battleship 'Missouri' in Tokyo Bay.

With the gradual return of skilled employees from the services and munitions factories, additional coal supplies, and the growing availability of adequate safe shipping, the Potteries were able to look forward to a fairly rapid resumption of normal working.

The first year after the war was a remarkably good one for Twyfords. Output was far better than anyone had expected. Trade was good, and there was no difficulty in selling all that could be produced. If all went well with labour, raw materials and coal, it was anticipated that production would be back up to pre-war levels within months.

It now became very apparent just how valuable E.H.Bailey's reconstruction fund was going to be. The task of modernising the factories was about to begin; the first stage was estimated to last two years, and if called upon to do so, the fund could meet half the total cost.

Just over three months after V J Day, in December 1945, news came to Twyfords that the former Chairman, J.T.Webster, had died. His health had not been good for a decade or more, and after a serious illness in 1940, he had been an invalid for the remaining years of his life. J.T.Webster had played a vital role in securing Twyfords' future. As Chairman of Twyfords, and second President of the Pottery Manufacturers Federation, he had been a great ambassador for both the Company and the Industry.

He was a member of the Prince of Wales Committee, which advised the Prince on industrial matters; served on the newly formed Industrial Design Council, and travelled to South America as part of a British Government trade delegation. (On that occasion, he had sailed on the same ship as the Prince of Wales, who thereafter had asked at every warehouse he visited where all the British and particularly, all the Twyfords goods were - a story which was later confirmed by the Duke of Kent on a later visit he made to the Potteries in 1931).

Personally, J.T.Webster had been a very likeable and articulate man; 'charming' is the word most often used about him - and as the many, more-than-routine tributes paid to him on his retirement as Managing Director testify, he was an extremely popular figure.

In the T.W.Twyford tradition, he played a prominent part in the local community. During the First War, as well as running the pottery, he was a Special Constable. For many years, he was also a Justice of the Peace (though he preferred not to judge others and concentrated on out-of-court duties), and in 1928 was elected Mayor of the Ancient Corporation of Hanley, later becoming an Alderman. After a share bequest from Dora Twyford, he was appointed a director of Staffordshire 'Sentinel' Newspapers, and in a roundabout way, this was the source of much of his worldly wealth. When a large block of 'Sentinel' equity became available, he mortgaged almost everything he owned to raise the money to buy it. Then, in 1928, when Lord Northcliffe bought Sentinel Newspapers on extremely generous terms, Webster suddenly found himself a man of some substance.

As a lover of the arts, he became an enthusiastic collector, and numbered many eminent artists among his friends and acquaintances. These included F.L.Griggs, one of England's leading etchers, from whom he acquired a large number of works which formed the basis of a considerable collection. This eventually comprised around 200 etchings - all of them important and valuable works which, after his death, were given by his family to the Stoke City Art Gallery, as a J.T. Webster Memorial Collection.

Between them J.T.Webster and E.H.Bailey had steered Twyfords through what was arguably the most difficult period in all its long history, and in the middle of the worst trading conditions industry had ever seen, had helped the Company to keep its corporate nerve. Despite fierce competition, they had maintained the integrity of Twyfords' products, and through careful husbandry of its financial resources and steady re-investment in the business, they had paved the way for the Company's development in the postwar world.

CHAPTER TWELVE

The Reconstruction

When J.R.T.Hay arrived back at Twyfords after several years with the Coast Artillery and the Tank Design Department, he knew that there was a gargantuan task awaiting him. With the Royal Artillery's cooperation, he had been allowed to return to Cliffe Vale periodically throughout the war for Board meetings, and so he had been able to plot Twyfords reconstruction along with the then Chairman, E.H. Bailey.

When the subject first came up again, immediately after the war, Bailey said: 'Well, Jack, I've kept this for you' - and thereafter, J.R.T.Hay was effectively responsible for seeing the entire operation through.

His background in the Company was an interesting one, for though he had never actually met T.W.Twyford, he was in a way, one of his last appointees, and eventually one of the last executors of his estate. His father, George H. Hay, had come to the Potteries from Glasgow to become a partner in the accountancy firm of Bourner, Bullock and Company, and as such had for years, been Twyfords auditor.

As young Jack Hay progressed from being head boy at Newcastle High School to become a Trinity scholar in Natural Sciences, taking a first in mathematics, and honours in economics, Twyford followed his career, hoping eventually to employ him.

When Thomas William died, three months before Hay came down from Cambridge, J.T.Webster took up the scent.

But Jack Hay had his own ideas. Refusing the security of a job in his father's business, and avoiding the question of Twyfords altogether, he went off to India with the East India merchants, Hoare Miller, for whom among other things, he ran the Calcutta Steam Navigation Company, and the agencies for the Harrison and Blue Funnel steamers, as well as shipping jute fabrics all over the world.

Five years later, in 1926, he was back on leave, when Webster asked to see him and offered him the post of Company Secretary, which he decided to accept - having first to go back to India and work his notice. He joined Twyfords in 1927, was appointed to the Board in 1932, and spent most of the pre-war years dealing with overseas sales, and radically re-organising staff, production control, and the handling of complaints.

Now, however, before he could get on with the task of reconstruction, there were one or two other things to do - the most important of which was to get production moving again. E.H.Bailey's target of reaching pre-war levels within months was achieved as anticipated, though as it happened, not without

difficulty. 1946 was a year which saw problems with both labour and fuel supplies.

In post-war Britain, as elsewhere, people were beginning to learn the meaning of inflation, and as the effect bit home, the men looked to their wage-packets. There were disputes first with the potters, followed by the fireclay workers and fitting shop men, until finally a general agreement was reached in the pottery industry to increase wages.

Then the weather took a turn for the worse, and the country was lashed by one of the severest winters on record - throughout which, there were coal and electricity crises that rumbled on into the following year.

Despite the wage increase, there could be no corresponding increase in prices (at least, not on the home front), since Clement Atlee's Labour Government was enforcing price controls, and would continue to do so for some time. Nevertheless, though further increases in output seemed, for the moment unlikely, the company was performing quite well and the general situation looked relatively stable.

As things had levelled out and the factories settled back into their normal routine again, stage one of the reconstruction got under way at Etruria. So by the time the weather closed in, demolition and preparatory work had been done, and building was already well-advanced. The old, characteristic 'bottle' kilns were coming tumbling down, a nd in their place a four-storey factory was rising. Inside, a new and more efficient layout housed making and processing shops, and on the ground floor, newly built Dressler tunnel kilns were commissioned.

Developed in America, Dressler kilns had already been proved by the tableware industry and Twyfords own UK competitors. So the Company felt it could safely build them, two at a time, to help speed up its post-war recovery. The first of these new kilns was lit in April 1948; the second was ready before Christmas. Both were built to fire biscuit ware (part one of the twice fired process), and both were fuelled not by coal any longer, but by town gas. The total cost, so far, had been in excess of £200,000 - but turnover in the previous year had for the first time exceeded one million pounds, and the benefit from the new plant helped send it soaring to another record high.

Stage two was begun immediately. As the second of the biscuit kilns was being lit, elsewhere on the site, a new wave of demolition swung into action, and the old glost ovens (used for the second stage of firing), were razed to the ground. By the early spring, foundations were being laid for the next part of the new Etruria - another multi storey section to accommodate two new glost kilns, additional process workings, and extra warehousing.

Here, however, there was an unexpected problem. It was found that there would not be enough town gas available to run yet more new tunnel kilns. So the Company would have to provide its own gas-producer plant. This was rapidly arranged, and the plant was installed on the first floor, where it was gravity fed from third-floor storage hoppers, stocked with coke by a skip hoist, an arrangement which had never been tried before, but which worked extremely

well.
In October 1950, the first glost kiln was lit and in March 1951, the second was ready to go. The cost, this time, when everything was finished, was approaching £400,000.

The big difficulty which had to be faced in turning 'Barnum's' into a modern post-war factory - at the time, one of the most up-to-date in the country - was the question of how it could he done, without major losses in production. The two-stage process helped in this, of course, and stocks were built-up beforehand, but the main thrust of the solution lay in the strategic timing of demolition and construction. Though large areas of the site obviously had to be cleared for access and re-building, as far as possible the old bottle ovens were kept working right up to the minute the new tunnel kilns were ready for operation.

During reconstruction, sections of the pottery were 'isolated' by means of temporary walls, so that production could go on while the chaos and darkness of building and demolition raged all around it. This resolved, there was one other major problem which always had to be tackled with any sizeable new pottery - particularly, as here, in a coal mining district.

To very large, very long and carefully constructed tunnel kilns, even a relatively small amount of subsidence can clearly be disastrous. So each of the four-storey sections housing the kilns were 'floated' on more than 300 reinforced concrete piles, sunk deep beneath them.

The new workshops, which were completed by the end of the year, must have seemed like a different world. The comparative absence of smoke; the conveyor systems which eliminated most of the more arduous lifting and carrying; the modern machinery which made many of the processes so much easier, must have all come as a revelation. The buildings were spacious, well-equipped, with a new canteen, modern cloakrooms and lockers, and extremely well-ventilated - heat from the kilns being dispersed by a cross-flow of air through a special false ceiling.

Sixty years on, it was like Cliffe Vale all over again. Twyfords had, in fact, even used the same architects - R. Scrivener and Sons of Hanley. The main contractors were the firm of G. Percy Trentham; F.G.Yorath of Wood, Goldstraw and Yorath, was the consultant architect, and
Dr H.W.Webb, the technical consultant. The tunnel kilns were by Gibbons Brothers of Dudley, licensed by Dressler in America.

When the first phase of the reconstruction he had initiated drew to a successful conclusion, E.H.Bailey had been with the Company just short of 50 years - for 30 of which he had been a director. He now felt it was high time he eased the strain a little, and on completing his half century with Twyfords, relinquished the office of Managing Director, in 1949. Like J.T.Webster before him, he agreed to stay on as Chairman, and J.R.T.Hay now took up his seat in the Chief Executive's chair. (This is possibly what Twyford and certainly what Webster had hoped for).

At the same time, the Board was substantially strengthened. W.T.Cross became Sales Director, A. Victor Pimble was appointed Technical Designs Director, and

after sterling work on the reconstruction, the post of Production Director went to Leonard Beardmore. Little more than a year after making this decision, E.H. Bailey fell ill. After some weeks, he was apparently well on the road to recovery and telephoned J.R.T.Hay, saying that he was thinking of taking a holiday. Two days later, he suffered a sudden relapse and died. Despite his 51 year career, he was only 65 years old.

He had been Chairman of Twyfords for a decade, and served as Managing Director for more than fourteen years. During that time, he had played an influential role in the British Pottery Manufacturers Federation, the British Sanitary Earthenware Manufacturers Association, and the British Sanitary Fireclay Manufacturers Association - though, in fact, he never held an official position in any of the three.

It is significant, however, that in 1946, he was called upon by Sir Stafford Cripps, then President of the Board of Trade, to serve on the Working Party Report on the Pottery Industry, and it was generally acknowledged at the time, that he was one of the guiding lights in the report's compilation.

He was a very private man, and though latterly a J.P., was diffident about public office. But as N. Wentworth-Shields, Director of the Federation and Chairman of the Association, said in a tribute to him, E.H.Bailey was nevertheless one of the Industry's greatest figures.

For Twyfords, perhaps his most outstanding achievement, apart from helping to minimise price wars in the industry, was in preparing for the reconstruction, and the introduction of tunnel kilns. The development of this programme was to continue for some years after his death, and as we shall see, it was part of a movement which wrought a revolutionary change in the lives of both the potters and the Potteries.

More immediately, as soon as the reconstructed 'Etruria' was fully on-stream, it gave the Company a considerable fillip. Prices on the home market had been held steady for four years. Yet despite this, and increases in raw material costs, transport, fuel, power and labour, profits continued to rise to record breaking levels. This apparent contradiction can be partially explained by the buoyant demand for the Company's products which persisted until the end of 1951.

But the major factor in being able to boost output sufficiently to make the most of the rising market - and the ability to do this at a practical price - was undoubtedly the increase in efficiency and the economies of production made possible by the reconstruction. In 1952, there was a sudden downturn. Production had to be curtailed for the first time since the war, and there was briefly, some measure of short-time working.

The home trade had contracted only slightly; the real problem lay overseas. At the time, export once again accounted for more than half the business, and in the course of the year, it was very nearly halved, as a direct result of limitations, and in some cases, total prohibitions, imposed by importing countries anxious to stabilise their balance of payments.

Competition for a smaller volume of trade led, with a gloomy sense of deja-vu, to a bout of price cutting, and one or two smaller makers went to the wall.
Twyfords, too, was hard hit. Turnover dropped steeply and profits fell by more than two thirds. Though it was hardly welcome, this passing depression gave the Company a useful breathing space, and time for a little regrouping.

H.B.Hulme left the Company, and his assistant, Norman Richards, was appointed Company Secretary - the first step on the road to higher office.

The brass shop at Cliffe Vale, where the taps and fittings were made, had been re-equipped and re-vitalised, and a significant change was made in cistern assembly. The pottery syphon which had been adopted as a 'make-do' war-time measure was now made standard equipment. (With the fresh availability of metals, it had been discontinued, but it soon became apparent that it was an altogether better device, being totally rigid, and completely impervious to the chemical action of mineral salts in water).

Since the death of E.H.Bailey, J.R.T.Hay had been Chairman as well as Managing Director, and this short hiatus also gave him time to get his house in order. High on his list of priorities was the foundation of a formal, regulated pension scheme - something which at the time, was by no means commonplace. The existing system, devised by J.T.Webster, still meant that pensions were granted to some extent, at the directors' discretion. The Hay scheme, via insurance company investments, operated automatically. A pilot scheme for the staff had been introduced towards the end of 1951; now a similar scheme was put into operation for the workforce as a whole - and was enthusiastically received.

J.R.T.Hay was then President of the British Pottery Manufacturers Federation - and it was his scheme that the Federation provided as an example to the Industry as a whole.

By the beginning of 1953, more than a million pounds had been spent since the war on modernising the factories.

Business picked up again, with a heavy demand from merchants in the home-trade, and a gradual, but steady improvement in exports. The time has come for the reconstruction to turn its attention to the fireclay, which now became Len Beardmore' s consuming interest. The first and most important part of the operation was to get a new, modern tunnel kiln built, so the fireclay could go on producing while the old-fashioned intermittent muffle kilns started to come down on both the Cliffe Vale and fireclay sites. (In fireclay, the ovens were not 'bottles' but shaped like loaves of bread).

The new kiln was to be housed in a two-storey building, which was constructed on a reinforced concrete frame, clad with facing bricks. As at Etruria, its foundation contained a mass of huge pre-cast concrete piles to carry the weight of the kiln (in this case, more than 400), and similarly the area over the kiln was insulated with a false ceiling and cavity ventilation. Above it, on the first floor, a new masoning and assembly shop was installed, along with extensive warehousing.

The entire job took two years to complete, much of which was devoted to the new Gibbons kiln, which was thought to be among the largest of its kind built to date. It was 416 feet long, fired by town gas, (though up to the last minute, it looked as if another producer plant would have to be built), and incorporating the very latest kiln monitoring and control system. In tunnel kilns, the ware is not piled high as in the old ovens, but goes through stacked on trucks or 'kiln-cars', which run on sunken rails, like a miniature railway.

Where the 'Klondyke' differed from Etruria in this respect, was that here, on the return track, three pits were installed, each with an automatic lift to allow easier loading and unloading of the heavy fireclay pieces, stacked high on the cars. This part of the operation was finished towards the end of 1954, when this vast kiln was ceremonially ignited.

Just as the re-construction of 'E-Works' had been a two- stage process, so it was with the fireclay. The buildings were now extended to accommodate tunnel kiln Number Six. The making shops were enlarged and modernised, and the glazing department totally re-built.

The second kiln was ready and working by the end of June 1956, when the last remaining coal-fired intermittent ovens were finally replaced. (Two years later, the fireclay began using one tunnel kiln only, due to improvements in the clay body and firing techniques).

Two was the introduction of conveyors, mechanical handling and lifting equipment, which revolutionised the simple business of manipulating and moving the ware - in what up to then, had been an extremely heavy, physically exhausting job (and in fireclay casting remains so).

Three was the change to continuous firing tunnel kilns and the consequent reduction in environmental pollution - and if you had to choose just one factor as being the most far-reaching of all, it would undoubtedly have to be this.

In purely commercial and manufacturing terms, the difference was staggering. The approximate average cost of firing a tunnel kiln was 50% below that of firing an intermittent oven. In coal-fired ovens, much depended on the skill of the fireman, the weather conditions, and the quality of particular batches of fuel. In oil or gas-fired tunnel kilns, this is not the case. Tunnel kilns are also vastly more controllable, so that optimum levels of output-for-quality can much more easily be achieved - firing losses are far fewer and output overall is increased on a massive scale.

The working and social effects were more remarkable still. In the days before tunnel kilns, the whole skyline of the Potteries was pierced by the thrusting chimneys and bulbous bodies of hundreds upon hundreds of 'bottle' kilns. To work with them and in them was a hot and potentially dangerous business.

Ware, usually in 'saggars' (fireclay vessels used to protect the ware from the direct action of the flame) were carried on the 'placers' heads, through the outer doorway and in under the dome of the kiln or 'hovel'. Inside stood the cylindrical

oven, with a walk-way and fire-boxes all around it. The ware was carried through the oven opening and the saggars were stacked high or ‘placed’ in ‘bungs’. (These were not unknown to collapse, on occasion, causing injury to the operatives or ‘placers’). To reach the top of the bungs, the men climbed wooden ladders called ‘horses’ and to get to the very top, the big ‘oss’ was brought in. The opening was then built-up with a mixture of masonry and clay, and the oven fired. At intervals, it was stoked or ‘baited’ and the temperature gradually increased. The fireman and his team remained with the oven in relays throughout the firing, and the state of the ware was checked by extracting ‘Buller’s rings’ or ‘Seger cones’ with an iron rod.

When it was finished, the opening was broken open and the oven emptied or ’drawn’, as soon - and as hot - as it possibly could be. The men unloaded the kilns amid clouds of smoke and steam, stripped to the belt, often with gunny-sacking wrapped around their waists and ankles to soak up water thrown over them by colleagues, in an attempt to cool them down.

To compare this with the same process in tunnel ovens is rather like comparing a field-surgery in the middle of a battle with a modern operating theatre.

If this inferno was unpleasant to work in, it was equally discomforting to live nearby it. When George Bernard Shaw visited the Potteries, he gave up counting the number of chimneys in Stoke when he got to 123. Pails of black smoke hung in the air; trees, hedges and houses were covered with soot-fall. The snow often came down black; housewives had to choose their washdays very carefully and sometimes, when the wind was in the wrong direction, you could not see across the road from Cliffe Vale to the Fireclay.

The disappearance of the smoke following the introduction of tunnel kilns (and particularly after the Clean Air Act of 1956) was nothing less than sensational - and by the middle of the 1960’s the quality of life in the Potteries had improved beyond recognition. In 1951, of the 16 bottle ovens which had stood at Etruria, only four were left standing.

Of these only one was really suitable in site and condition for preservation. This was later found to have been damaged and badly deteriorated. After the reconstruction had drawn to a close, it had been struck by lightning.

CHAPTER THIRTEEN

Cheshire Changes

While the 'Klondyke' was being re-built, the sanitaryware industry itself experienced something of a gold rush. For Twyfords, since the brief slump of 1952, succeeding years brought new records in output, turnover and profit. By the end of 1954, demand was such that all the factories were fully stretched, particularly in earthenware and vitreous china.

The combined efforts of Cliffe Vale and the newly reconstructed Etruria Works were no longer enough. A new pottery would have to be built.

For years, Twyfords had been doggedly filling-in and levelling 2 sites that they owned in Stoke for longer than anyone cared to remember. But now the question of building on one of these finally arose, the local authority announced that they had other plans in mind.

The new pottery would have to go elsewhere.

Estimates of the time it took to find a suitable site vary according to the memories of the participants and the level of frustration they felt, from six to eighteen months. As estate agents' and architects' reports came in, sites nearby were variously classified as 'hopeless' or 'water-logged'.

So the search was extended to the rest of the Potteries and wider afield in Staffordshire. The Stone area was thought to be 'over-developed; areas near Blythe Bridge and adjoining the Trent were 'subject to flooding'. A site at Audley had 'considerable slopes' and might be subject to 'possible subsidence' - and on a site at Newstead, it was 'almost a certainty'. Biddulph was tried, Kidsgrove, Baddeley Green, Adderley Green and Endon - all to no avail.

Finally a sign-post gave Jack Hay a flash of inspiration. He and Len Beardmore had been viewing a site some way to the North of Talke (the last of nine on a map of possibles; provided by Lyndon Marks, the Scrivener's architect who was to be responsible for the new building) - but on closer inspection, they were unhappy with it. They were about to leave, a little disgruntled at not liking any of the sites, when Hay noticed the sign - which said 'Cheshire'.

This was the County where the new factory was destined to be.
Despite some scepticism, Marks was briefed to go ahead and find a site there, and well into 1955, he did. After one or two more disappointments, the spot chosen was Brund's Farm in Alsager, with a farmhouse and 52 acres of rather poor sandy soil, half of which was fairly level.

Some eight miles from Cliffe Vale, bounded by the railway line to Crewe and a trunk road from the Midlands to Merseyside, the site seemed ideally placed. (In

another eight years, the M6 would run within three miles of it). Geologically, too, it looked hopeful, being north of the risk of mining subsidence; south of risk of land-slip from salt.

Eleven separate test bores revealed nothing to the contrary. The site was already scheduled for industrial development. So the purchase went ahead.

The town of Alsager was (and still is) an attractive leafy settlement, with a small shopping centre and a number of housing estates, surrounded by open farmland. From the 13th until the late 18th century, the land and manorial rights had rested with the Alsacher family, the last of whom - three sisters - endowed Christ Church and a nearby school.

Prior to the mid 19th century, it remained a small, rural village, based almost entirely on agriculture. Then in the 1850's came the railways and in the next 20 years, dormitory residences built by the 'gentlemen of the Staffordshire Potteries' arose - and many of these handsome Victorian villas still survive. The town expanded undramatically, added light industry, and more housing to accommodate the growing population - and this is how Twyfords found it, when Jack Hay first arrived at Brund's Farm.

The coming of the Company to the town was not universally welcomed. There were some misgivings among the local inhabitants, and some opposition from councillors - and nobody, least of all Twyfords, could blame them. However, when the smokeless technology of the tunnel was explained, and the plans and safeguards expounded upon in numerous meetings and public discussions, most of the expected opposition subsided.

The Council, who welcomed the factory, the planning authority and the Company worked closely together to agree means of avoiding smoke nuisance and problems from other possible pollutants, and it was decided to keep the building to a single storey, so it would not be obtrusive.

An isolated four acres on the south side of the railway was sold to a local builder for housing. A right of way, which had crossed through the centre of the site was given a more peripheral, more direct route, and landscape gardener, Richard Sudell, was called in to plan lawns and plant a small 'forest' of oaks and conifers, which now screen the pottery from the roadway. With the plans decided upon, the building could now go ahead.

Twyfords approach to building had never been leisurely. But now, with not many months to oncoming winter, things moved very rapidly indeed. With Lyndon Marks for Scrivener's, the team was led by Twyfords' Production Director, Len Beardmore; Company Engineer, Gordon Clarke and Development Manager and Technologist, Alec Miller.

The first job was to level the land, cut the roadways and dig the storm water and sewerage systems, and this was all done by August 1956. In the late summer and early autumn, the foundations were cut, and the first shed was erected at extremely high speed, in the face of encroaching bad weather. By November, the building contractors, G. Percy Trentham (the same firm that had worked on the

reconstruction) were able to set to on the factory proper, beginning with the sliphouse.

The stack for the first kiln, Number Seven, was completed in June 1957, and the first of the buildings and making shops made ready. The sliphouse was operational by February 1958, and in that same month the kiln was lit. The second kiln, Number Eight, was firing just four months later, and at the end of June ‘58, the factory came into large scale production. In the meantime, the first casters arrived. At the beginning of the year, there were only two of them - the tiny nucleus of the production staff - Sid Clowes and Percy Kelsall. But as the building went on all around them, they were joined by Albert Brunt, and another colleague - until gradually, the full initial complement of over 130 people was built up.

J.R.T.Hay had given the staff three months warning of the new factory’s opening, and asked them to consider the possibility of working in rural surroundings in ‘far-away’ Alsager. At first, it was thought there would be some difficulty in getting enough people to come. But in the end, more people wanted to work at the new factory, than there were jobs to accommodate them.

A change of attitude was also occurring in the town. The buildings were far pleasanter than many had thought they would be, and expressions like ‘a factory in a garden’ were beginning to appear in the local paper, the ‘Alsager Times’. ‘It certainly makes a very handsome factory’ they wrote in August 1957, ‘and far from detracting from the appearance of the district ..... it provides quite a smart new approach from the North Staffordshire end’.

There were also hopes for new employment prospects, and while specifically pottery skills had to be brought in from outside, it was planned to draw more employees (particularly trainees) from the locality, as the factory progressed. Certainly, a great deal of care went into making sure that everything was just as it should be.

One of the major difficulties that Twyfords knew they would have to face early in the project, was the question of drainage and effluent disposal. The Alsager factory was on its way to being probably the largest sanitaryware pottery in Europe, and its sheer size created something of a problem. The area covered by the first phase of building was 184,150 square feet, comprising sliphouse, kilns, making, glazing, boiler house, warehousing and despatch, and with that amount of roofing, even the business of draining-off the rain becomes a very big job.

It has been estimated that the factory, which of course is now much larger, produces approximately half a million gallons of water to be drained-off for every one inch of rain that falls. On average, Alsager gets more than 30 inches of rain a year. Add to that even a 1958 water usage of upwards of 10 million gallons, plus clays and other solvents, plus sewage, and you begin to get some idea of the size of the problem. In solving it, storm water, sewage and effluent were each given separate systems.

Storm water was channeled into the stream which ran through the site; a pumping station was built to handle sewage, and the method of effluent disposal

was based on work done at the Directorate of Scientific and Industrial Research, which Gordon Clarke had previously used to help clear thousands of gallons of surplus milk for the dairy industry.

It includes a special drainage system, part of which is buried in a culvert 20 feet deep, and a 30 foot tank where liquid and clay sludge is separated by the addition of aluminium sulphate. The liquid is pumped off, and the sludge transferred into tankers and tipped. (In those days, at the rate of 15,000 gallons a week; now at 45,000). This system has since been considerably refined, as the amounts involved have grown larger and regulations stricter, but from the first, it was a model means of effluent disposal.

At the time, the building methods employed were also quite novel, using structural steel, and the then very innovative three-pinned portal frame. This is designed so that the structure takes most of the load, and consequently, the foundations can be made much simpler.

With the change to tunnel kilns still relatively recent (and smokeless regulations still to come), Twyfords were very conscious of the problems of atmospheric pollution. Boiler plant, along with two Gibbons kilns, each in excess of 350 feet in length, meant once again, that this was a difficulty on the grand scale. Fortunately, this time there was a precedent. At Esso's Fawley refinery in Hampshire, they had experienced pollution problems affecting vegetation in the New Forest, and a research team had been sent in to take a look at possible solutions. On the basis of the Esso Team's findings, the stacks at Alsager were designed and built - and since the outset, pollution at the pottery has never been a serious problem.

The kilns were originally going to be gas-fired, but because this subsequently turned out to involve a new gas main coming miles from Kidsgrove at a prohibitive cost, it was decided to use oil instead. (With the development in the early 1960's of a new and more accurate burner system, the cost of oil firing was substantially reduced, and so it continued to be used until the introduction of natural gas in 1971).

Other services were more straightforward. Sidings were built, complete with a mobile jumbo-crane, for handling shipments of clay from Devon and Cornwall, but as bulk carrying began to drift from rail to road, Twyfords moved over to trucks and trailers. (This around 1966/67).

Electricity arrived without a hitch, but tended to be accident prone. It came via overhead cables from Crewe and Mow Cop, and for the first two or three years, supply breakdowns occurred at the rate of about one a week. Thunderstorms would cause the breakers to cut the supply automatically, and on one dark and stormy night, the local sub-station was blown-out completely, when a swan flew into the line! Better switchgear did improve the situation in time, but meanwhile Twyfords installed a steam-driven alternator, in case of emergencies.

The Alsager factory was obviously a massive investment, and it came at a time when technology was changing. So from concept through to commissioning, there had to be an element of flexibility about the whole project. The sliphouse,

for instance, started operating with filter presses and mixing arks for the then conventional method of mixing slip. (Here the ingredients were prepared individually, mixed together and pressed into cakes, then re-mixed prior to making). But it was designed so that it could be readily converted to direct preparation - effectively a one-stage operation, which was in development at Twyfords, at the time of building, and went into full time use around 1961.

Probably the biggest change the factory had to accommodate however, was the change in materials and firing techniques which swept through the industry in the 1950's. In the first half of the decade, vitreous china had begun to replace earthenware as one of the two basic sanitaryware materials (the other, of course, being fireclay).

Vitreous is, if you like, an extension of the concept behind T.W.Twyford's original 'Vitrina Ware' - a ceramic material in which the clay is vitrified in firing so that both body and glaze are non-porous. It also has the added advantage that where earthenware is given to crazing, (a fault caused by the differential expansion of the body and glaze coating), vitreous is free of it.

Twyfords had been making vitreous china as long ago as 1938 under the brand name 'Ceramant' - but such was the quality of its 'Vitromant' earthenware that it had not pursued it with any great vigour.

In 1954-55, Cliffe Vale's bottle ovens were producing about 25% vitreous, 75% earthenware, when the Company decided that the time had come to go vitreous entirely. The balance of output was gradually adjusted, so that production would not be seriously impaired, and the Alsager factory was designed and built on that premise - as a vitreous china pottery, producing 'Ceramant' ware and nothing else.

Alsager was initially constructed, with Number Seven and Number Eight kilns, as a twice-fired pottery - that is, firing first to biscuit and then to glost. But in the second half of the decade, the techniques of once-firing developed at such a rate that it became clear even during building, that the change-over would have to be made.

This was done in 1960. The dried clay pieces were now sprayed with liquid glaze and fired at a temperature of 1200^0 C - the result being equally glossy, equally hardwearing and resilient ware, for a fraction of the firing time and cost. Not surprisingly, after Alsager, Etruria also became a once-fired pottery, first mainly with earthenware, and then from 1962 onwards, all vitreous.

From start to finish, from struggling farm to producing factory, the Alsager project took a little more than three years to complete.

In some respects, its visible impact was far less dramatic than that of the much lengthier reconstruction - there being no belching chimneys to replace, nor sweating men whose lot could be seen to be made much easier.

But while nothing could equal the impact of the change from bottle to tunnel kilns, in other respects the changes Alsager brought were of great importance.

The reconstruction had managed to combine a powerful increase in efficiency and productivity, with a drastic improvement in standards of health and safety - and Alsager did the same. The Alsager factory was more open, airy and better ventilated than any that had gone before, and the greater use of mechanisation, conveyors and fork lift trucks again made work much lighter for the operatives. The atmosphere could be more accurately controlled for temperature and humidity - contributory factors in controlling dust levels in the battle against 'potter's rot'.

More efficient extraction systems and cleaner metal work benches, coupled with gently sloping floors for ease of swilling and cleaning, all helped to reduce the level of dust below that considered harmful.

New overalls in 'Terylene' replaced dust-retaining cotton and rubber (this after a British Ceramic Research Association recommendation), and new types of fettling equipment with hoods and blowers, and skirts to collect the dust, reduced the hazards still further.

It was found that as compared with earthenware, both vitreous china and fireclay bodies contained much less 'free silica', which either as quartz in its pure unfired state or as cristobalite' after firing, could clog and scar the lungs of the operatives when dust was present in the atmosphere in a certain particle size range. Also that with increasingly sophisticated analytical equipment, atmospheric dust could be monitored more accurately, to ensure that recommended minimum dust concentrations were not exceeded.

Such developments continued throughout the 1960's and 70's, with striking results. In 1958, across the whole pottery industry, 350 new cases of pneumoconiosis were reported. In 1978, across the whole industry, only 5 new cases occurred - and not one of the five was in sanitaryware.

The increase in efficiency was just as impressive.

With both the reconstruction and Alsager completed (at least for the time being), Twyfords now had three modern, smokeless factories, operating at much reduced costs.

The total of eight continuous tunnel kilns were now capable of producing some 1,250,000 pieces of vitreous china and up to around 70,000 pieces of fireclay a year - vastly in excess of record pre-war production.

In 1959, the last of the old ovens at Cliffe Vale came down.

The old inferno had given way to the almost clinical conditions of Alsager, and the age of the bottle kiln was finally dead.

CHAPTER FOURTEEN

The New Generation

For the decade and a half from 1945-1960, Twyfords' available time, management and material resources, had been largely taken up with re-building.

That production levels had not only been kept up, but built up during this time, was something of a triumph of planning over probability. The Company had weathered the changes remarkably well. In the late 50's, it had survived credit squeeze, building recession, wage increases and a shorter working week, without serious damage. Profits may have dipped a little, but as Alsager came on stream, Twyfords began to reap the rewards of modernisation. Technical improvements reduced production costs, and this meant better margins on some products, substantial price cuts on others.

As the new decade dawned, there was a sharp recovery in the home trade, new plans for public buildings and grants for home improvements - particularly for the installation of bathrooms and lavatories in older properties. The prospects were becoming distinctly brighter, and Twyfords was able to start the 1960's on a high note, as turnover and profits recovered to set new levels, at somewhere near maximum capacity.

J.R.T.Hay was now himself in his sixties, and though he had no plans for retiring just yet, felt the time had come to look to the Company's succession. Through the deaths in successive years (1957-59) of Colin Dewsberry, Victor Pimble and Len Beardmore, Twyfords had lost the valuable services of three executive directors of long standing and experience. So the most pressing need was to strengthen the team. As a consequence, in 1959, A. J. Miller was made Technical Production Director, and F. L. Puckridge, Sales and Administrative Director. Hay had also sought the advice of the banks and insurance companies in appointing two non-executive directors of wide enough experience to ensure that Twyfords' financial arrangements were fair and reasonable, as compared to other companies of similar size and profitability.

The result of these discussions was the appointment of H. Victor Flather, a Chief General Manager of the National Provincial Bank, and of F. Cowan Douglas, a partner in the leading Glasgow firm of Chartered Accountants, Brown, Fleming and Murray, and a director of ten or more other companies.

But Hay knew he would have to go further than this. The problem of the succession was complicated by the increasing awareness among pottery manufacturers that as they grew larger, the possibility of take-over grew proportionately more likely. J. R. T. Hay had already had talks about a merger with Allied Ironfounders, and about a possible link-up with Doulton's. But these

had come to nothing.

In 1960, he achieved his first success, when D. T. Barritt, Chairman of Henry Simon Holdings and Deputy Chairman of Simon Engineering, joined the Company in a non-executive capacity. His second, and more far-reaching appointment was made in 1963, when H. F. H. Barclay, who for the past 13 months had been Hay's personal assistant, was also given a seat on the board. At the time, Harry Barclay was just 39 years old.

Educated at Radley and Oriel College, Oxford, he had been commissioned in the Royal Naval Volunteer Reserve and served four years as a pilot in the Fleet Air Arm during the 1939-45 war. On demobilisation, he had started his peacetime career with Metal Agencies of Bristol - a Company of builders merchants later to become known as U.B.M.

He had now, to use his own phrase, become a 'gamekeeper turned poacher', and in 1964, brought to the post of Sales Director a keen understanding of what it felt like to be a customer. In the time-honoured Twyfords' way, he gradually came to be accepted as J. R. T. Hay's lieutenant, and heir apparent. In 1965, he became Assistant Managing Director; in 1966, Joint Managing Director, and in 1967, sole Managing Director, under J. R. T. Hay's continuing chairmanship. The process was almost complete.

In 1965, Norman Richards became the Company's administrative director. In 1966, in the role of non-executive financial adviser, Leopold de Rothschild joined the Board, and finally in 1967, J. K. Warrington, Chairman of the British Ceramic Research Association, ex Managing Director of Doulton's and past president of the British Pottery Manufacturers Federation, became Twyfords full-time Executive Deputy Chairman. Hay's worries for the succession were now over, and he said as much in his Chairman's statement in the Company's report and accounts for 1967/68.

During these years, a spate of production problems which had dogged Twyfords in the early part of the decade was finally overcome. Demand for the Company's products was growing once again. The factories were on full output, and more often than not, were working overtime.

Twice in 1964, Alsager was extended. New bays were built to accommodate the transfer of cistern fitting from Cliffe Vale, and production in this area soon tripled. Later in the year, another 66,000 square feet was added on a swell of generally buoyant trading, and a promise from the Wilson Government of a huge expansion in building, in both public and private sectors. Even when this failed to materialise, and there was a brief spell of over-capacity and short-time working, turnover and profits held steady.

In fact, so far was this the case, that in 1966-67, a further extension of 66,000 square feet was called for, and a new kiln - Number Nine - was installed to handle re-firing of less than perfectly glazed pieces - a process which had previously been carried out at Etruria.

With Alsager's enormous capacity and both factories making entirely vitreous

ware, it became possible to centralise some of the services common to both. In 1969-70, the sliphouse at Cliffe Vale was closed and all slip preparation transferred to Alsager, where the existing facilities were greatly enlarged. (Etruria was then supplied from the central source by road tanker). Similarly, all despatch and packing for the home market also moved to the new site, where it could be done much more rapidly - vehicles being loaded 12 at a time, under cover, in a vast warehouse, the doors of which were based on those of an aircraft hangar. Finally, calcined flint (the whitening agent and filler for the clay body) was now to be prepared in Alsager's two new gas- fired kilns, while the one at Cliffe Vale - the last 'bottle' shaped kiln of any kind in the Company - was at last put out of action. It is now the subject of a Preservation Order and will be preserved for posterity.

Expansion at Alsager had now become an almost continuous process. Throughout the reconstruction and the first phase of Alsager's building, bathroom design had not really changed significantly. New patterns were introduced almost every year, but the basic style remained the same. Neither had the technology of the closet (as opposed to methods of making it), altered a great deal.

In 1953, Victor Pimble had introduced his 'Vortic' single- trap syphonic at the British Industries Fair, Castle Bromwich, with the novel idea of a spiral shortleg in the trap to build up the water pressure and strengthen the syphonic action. But this, along with other developments, was a refinement not a new departure, and the basic line-up of closets also went unchanged. Angular styling and the cut corner had held sway since the 1930's. With the 1958 catalogue it finally bowed to change.

Vitreous China and the coming of once-fired ware brought with them the promise of fewer problems with crazing, and far more controllable levels of distortion in the kiln. Technological change, as ever, prompted changes in design, and the bathroom took on smoother altogether more rounded lines typified by the bow-fronted basin.

It was the same in fireclay, and even the heavy industrial 'Island' washing fountain, which for years, had been splendidly hexagonal, was now made circular.

The old 'No.87' double-trap syphonic was replaced after a successful run of over 20 years, by the 'Nuclere' - which incorporated the 'bullet' pressure-reducing fitment, and what had become almost the traditional bathroom colours - Jade Green, Old Ivory and Primrose - were joined by the 'new' pastel shades, including Shell Pink, Turquoise and Peach.

In a year of change, E. Stanley Ellis, Victor Pimble's successor, took the opportunity to introduce one of the great classics of the contemporary bathroom - the 'Sola' washbasin, designed and equipped with Twyfords patent concealed fixing bracket. He had come up with the idea two years earlier when Guy's Hospital had requested an 'all-bowl' basin, and the production people had said it was impractical to make one in vitreous. Ellis made it practical and the 'Sola' was launched first as a 15-inch basin, and then in 20 and 23-inch models. It was adopted for use in the new schools building programme and became a huge best-

seller.
By 1963, it had clocked up sales of 100,000, and also became the first sanitary basin to win a Design Council Award. Three years later it was followed by a second. For the Barbican re-development in the City of London, the architects Chamberlin, Powell and Bon, wanted a minimum projection, built-in hand-rinse basin to fit in the lavatories of the 2,000 apartments that were part of the scheme. Together with designer and fellow architect, Michael Hohmann, they created the basic design, which was passed on to Twyfords to perfect. The result was the 'Barbican' basin, which came complete with its own spray mixer, hidden toilet roll holder, and soap dish, and when fitted, projected from the wall by a mere 6 inches. Its eye-catching straight-lines and sharp curves (like a wide, sweeping 'L' shape) were only feasible thanks to the rapid contraction of vitreous on firing - otherwise the 'Barbican', unlike the 'Sola', would really have been impossible to make.

Thus Twyfords achieved 'the double', and having only recently presented an award to Messrs. Ellis and Hay, His Royal Highness, Prince Philip, now found himself presenting another to H.F.H.Barclay.

One of the most significant new departures made by the Company in the 1960's, however, had nothing to do with ceramics, and it came about in, of all the unlikely places, the fireclay fitting shop, where the sparge-pipes were made for urinals. In 1964, the use of chromium-plated copper for this purpose was abandoned in preference for stainless steel - which is less subject to imperfections, lasts longer, and of course, is easier to clean and maintain.

To effect the change, a new machine shop was installed with automatic lathes and the latest polishing and finishing techniques, and this meant there was spare capacity in the plating shop - a fact which was now turned to advantage.

Twyfords decided to launch its own range of luxury taps and bathroom fittings. They were initially designed by David Johnson and Roy Hine, later assisted by Frank Procter, and incorporated a number of patented features. They were produced in solid brass, plated in chrome or 24-carat gold - and christened 'Aztec'. Still in production today, they are solidly good-looking and extremely comfortable to use. Inside each tap is a device called a 'non-rising head' which reduces internal movement, and so helps eliminate sticking, squeaking and wear on the washers. (Combined with a 'flow-straightener' in the nozzle, it also helps reduce splashing). Aztec was launched in the 1968 catalogue, which was important for a number of other reasons too.

The difference in style that had first become apparent in 1958, had developed throughout the 60's, along with the growth of pastel colours. So that by the publication of this new catalogue, rounded shapes and contours totally dominated the range.

This was apparent in every aspect of the bathroom from WCs and bidets, to washbasins and baths. High-level WCs had all but disappeared and were soon to be replaced entirely by low-level and close-coupled closets. These included conventional washdowns, a new 'back-to-wall' model with hidden plumbing, and the 'Brampton ' double-trap syphonic.

The true successor to Pimble's 'Unitas-Silent' with basically the same mechanics, the 'Brampton' is probably the quietest w.c. ever - with a flush powerful enough to snatch toilet paper from your hand. There were also two new bidets - one with flush-plumbing, and both with rimless basins and conventional taps, instead of the ascending spray - and these were accompanied by a plethora of new basins.

Many like the 'Athena', 'Viking' and 'Classic' models were of the new 'large-bowl' design, while inset countertop basins such as the 'Rhapsody' and the 'International' made a welcome comeback.

The 'old' colours were quietly dropped from the range, and in their place along with the standard pastels came new soft shades like 'Pampas'.

The change in design had been a gradual one over ten years or more, but in the '68 catalogue, the shape of the modern bathroom finally emerged.

CHAPTER FIFTEEN

Home Thoughts And Abroad

Though Twyfords had been an exporting Company since the days when Messrs Aspinall and Rieman first opened agencies in New York and Berlin, it had never made a second attempt to manufacture overseas.

The loss of the Ratingen factory must have come as a severe blow, not just to Twyford himself but also to Webster and Bailey, who were by then in senior management, and it seems to have passed into the corporate subconscious that manufacturing abroad was an even more unpredictable business than export. Circumstances had never given the two men a chance to reconsider. With the slump, followed by the Second War and reconstruction, they had found themselves with other things to think about.

For J.R.T.Hay, it was different. With the home trade buoyant and the Alsager factory on stream, he had the resources, the capacity and the time to reflect on the possibilities of renewing Twyfords acquaintance with foreign manufacture. He also had an added incentive. Exports had always been subject to unforeseeable fluctuations, but in the post-war world, this was becoming more than ever the case. The war, with its interruption of supplies, had forced many overseas countries to develop their own manufacturing resources.

The other four continents had not stood still while Europe was fighting. The break-up of empire, rapid growth in population, and in certain markets, a dramatic increase in living standards had all contributed to change the face of overseas trade beyond recognition.

In some countries, vast untapped markets were opening up and there were gaps to be filled. In others, protection was forcing out goods of foreign manufacture, and home industry was expanding. In was clear that in certain areas, an overseas manufacturing presence would have to be established, or a considerable amount of trade would be lost.

The prospect was nevertheless an attractive one. For Twyfords, it offered security and expansion in existing export markets, as well as reduced costs in freight and carriage. For the host country, it would mean fewer imports and a saving on foreign exchange. Many markets were considered as manufacturing bases, but inevitably, in some there were problems.

In North America, margins were low and distribution controlled by domestic manufacturers. In South America, there were difficulties with exchange controls. West Africa looked promising, but it would perhaps be wiser to investigate further in a few years time - and so on, as Italy, Greece, Spain and numerous other nations were ticked off the list.

Of all the countries that were looked at, four stood out as being the best immediate prospects - South Africa, India, Pakistan and Australia, which as well as being a substantial market in itself, could also be used as a base for supplying New Zealand.

Of these, for different reasons, South Africa and India were given first priority. South Africa because it was an important and growing market with little local manufacturing. India because there was next to no home industry, a total ban on imports, and a population of 381 million people, which was rapidly increasing. In the end, the two projects developed virtually side-by-side.

In South Africa, speed was of the essence. For some years, Twyfords had pursued a cooperative agreement for the exchange of technical information with their colleagues and competitors, Shanks - and as Shanks, like Twyfords, exported to all four of the prospect countries, a joint venture, with one factory in each country was proposed.

As it turned out, however, Shanks were already collaborating with H & R Johnson's, the tile manufacturers, to build a vitreous china plant on Johnson's land in South Africa.

As a consequence, the technical agreement was brought to a close. Twyfords had to look elsewhere, and in the light of impending competition, the project now became doubly urgent. Further discussions to launch cooperative ventures were held with both Vaal Potteries and Anglo American Corporation, but eventually, Twyfords decided to go it alone. A new company, Twyfords (South Africa) (Pty.) Ltd., was formed for the purpose, as a wholly owned subsidiary.

Technical resources and a nucleus of management and supervisory staff were to be provided from Britain, while the rest of the workforce would be recruited locally - as, with the advice of the Standard Bank of South Africa, were the Chairman and non-executive directors. Though the Afrikaner Government tried hard to persuade Twyfords to build its factory near one of the newly established tribal lands, a site was finally chosen at Alberton, about 8 miles from Johannesburg, which had existing rail links with the rest of South Africa.

In 1961, Alec Miller and Gordon Clarke went out to arrange the land purchase and building, which began later that year. In January 1962, Derek Yates flew out with an experienced production team consisting of Messrs Groom, Raftery, Bowdidge and Lockett - by which time, the building was already well under way, monitored by regular reports and photographs sent back to England. By April 1962, the factory was all but complete, vital staff had been recruited, and the kilns installed, and already firing ware.

Within another two years, Twyfords South Africa had expanded its operations and was planning to do so again. It was also in profit and working at full capacity. The original South African directors were Bill Lane, Twyfords lawyer, who had been associated with the project since the beginning, and the banker A.I.D.Brown, who became the company's first Chairman.

When ill-health forced Brown to retire towards the end of 1965, he was

succeeded by C.A.B.Sampson, and in the same year, F.L.Puckridge resigned his directorship with the parent Company and became Director and General Manager in South Africa. They were later joined by a younger team including Graham Forrester and Tony Woodcock, who became respectively Works and Production Directors.

Extensions were completed under their supervision, which increased output by 50% - and there were further expansions in subsequent years. By 1970, the little factory in Alberton was contributing around 20% of the Group's total pre-tax profits.

Some 18 months before the South African project was launched, a number of applications had been received from Indian companies interested in pursuing a joint venture with Twyfords in the Sub-Continent. The timing could not have been better, and by 1960, discussions were underway with the Somany family - Indian industrialists of high standing, who had made an important contribution to the country's rapid reconstruction after independence.

The Somany's already had interests in glass and textiles, and with the approval of the Indian government, now came to an agreement with Twyfords to manufacture vitreous sanitaryware. Twyfords were to provide key management and technical expertise in the early days of the project, and then over an eight year period, take care of the plant, recruitment and training. In return, it would receive a 26% shareholding in the Equity of the public company, Hindustan Twyfords Limited.

After extensive survey of sites throughout 1960, land was bought at Bahadurgarh, near Delhi - where the climate was reasonable, and raw materials within easy reach in nearby Rajasthan. The foundations were cut for the Twyfords-designed factory in June 1961.

Jack Hay was familiar with the Somany family from his jute trading days and the relationship worked very well. N. R. Hancock (also an old India hand from World War II), led the team of Messrs Malkin, Hulme, Lee and Royle, who supervised the building and commissioning. The factory was in production in just 13 months (before the buildings were even finished). It went from pilot to full production three months later, and the first consignment of ware, distributed through the Sagar India Corporation of Chandigarh, was despatched in October 1962. In March of the following year, Hay was able to return to India for the first time since 1926 to attend the official inauguration, presided over by the then Chief Minister of the Punjab, Sardar Pratap Singh Kairon.

As in South Africa, progress was rapid. The training programme for Indian staff and operatives continued, both in Bahadurgarh and Hanley, and the works became profitable in little more than a year.

By 1965, Indian personnel had taken over all technical operations, and the company, under the guidance of H.L. and R.K. Somany, was supplying goods not only to the home market, but exporting to Africa, the Middle East and Asia. Four years later it had expanded greatly, and was producing over 180 different patterns.

When, however, the Indian Company entered the export market, to avoid confusion as to the source of origin in the market place, the name ‘Twyfords’ was withdrawn, and the company became Hindustan Sanitaryware & Industries Ltd., with Twyfords 26% share unaltered.

Twyfords was now ready to pursue the next phase of its international expansion, and as soon as the South African and Indian companies were settled down and happily producing, it turned its attention elsewhere. In Pakistan, the Fancy family had approached Twyfords to do business, but subsequently turned their attention to another branch of ceramics in Islamabad. Then in 1964, the Manzoor family of Manzoor Glass and Ceramics of Karachi were introduced to the Company by Gibbon’s, with a view to obtaining technical assistance.

This was to have been arranged broadly on the same lines as the Indian operation - but unfortunately, the project was never to get off the ground. The site was selected; the factory was designed, then changed by Manzoor several times, and finally, after a chain of delays, disagreements and financial doubts lasting more than four years, Twyfords regretfully withdrew in 1968, when the option granted by the Pakistan Government expired.

By this time, however, the company was already far more profitably engaged on the fourth of its overseas ventures - this time in Australia. Twyfords had been exporting ware to Australia ever since Mr Hebbard the agent had set up shop in Melbourne in 1883. It had been a steady, but unspectacular market, limited by specialist regulations, and zealous local testing - and in the 1950’s, increased national manufacturing started edging the exporters out.

Strangely, Twyfords share of the market actually got larger during this time - but the writing was on the wall - and combined with continuing ‘technical tariffs’ and at one period, a two year ban on imports of sanitaryware, it was enough to make the company consider establishing an Australian manufacturing base.

A tentative attempt at collaboration with a leading local manufacturer came to nothing - so Twyfords decided to go it alone. Initially, as there was already a U.K. and local manufacturing presence in Eastern Australia, J.R.T.Hay favoured a move to the West, where there was unlimited immigration from Britain, and very little local production.

Later in the year, however, H.F.H.Barclay spent a month visiting the five major Australian cities - and after careful costings and a detailed feasibility study, Melbourne (Twyfords old stamping ground) emerged a clear favourite - eminently suitable in terms of climate, market and as a base for distribution.

Treasury restrictions on Commonwealth investment precluded Twyfords from its chosen course of financing the project directly, and instead the Company, with Rothchild’s assistance, had to negotiate a Eurodollar loan.

In 1968, Harry Barclay found a 61 acre site at Broadmeadows, Melbourne - and three months after, Gordon Clarke (now the Company’s Chief Engineer) under took a preliminary survey and confirmed the deal on the land. Twyfords

(Australia) Pty. was formed in the autumn, and building started the following April.

Once again, local directors were appointed - in this case, with the retired banker, R.J.Thomas, as Chairman, assisted in a non-executive role, by A.R.Lobban, Twyfords Australian lawyer - and as with the local directors in South Africa, their contribution to the success of the project was immense, both in guiding their young management teams in the business, and assisting them in settling in a new country.

R.J.Howson as Chief Executive led the team from England, and he and fellow emigres - Production Manager, D. Chesworth, Caster T. Woodcock and Modeller, G. Harrison - all flew out in the summer of '69. (I. R. McCulloch, Sales and Marketing Manager, took a more leisurely route, and went by sea!)

Casting began the following January, and the kiln was lit on February 16 1970. Take-off was not as swift as it had been in earlier projects. A combination of production problems, difficulties finding and retaining labour, and a kiln wreck, all conspired to slow progress.

As part of a technical aid agreement between the English and Australian companies, however, Etruria's Works Manager, S. W. Holdway, spent five months in Melbourne helping to resolve 'the aggregate hindrance' and by October all was functioning smoothly.

Australia proved to be somewhat over-produced and a difficult market to crack, but the Company was nevertheless aiming for profitability in three years. In fact, it was in the black in a little over two, and with the help of a second kiln installed in 1972, went on to become what was probably the most profitable sanitaryware manufactory on the Continent.

Shortly after the Australian company was founded, and the project's development agreed, J. R. T. Hay announced his resignation from the Board - to come into effect on January 8 1969. His deputy, J. K. Warrington, now took over the Chair, but unfortunately, the succession did not go as smoothly as planned, and after only a few months in office, ill-health forced him to retire the following June. David Barritt (now Sir David) became non-executive Chairman, with H. F. H. Barclay remaining as sole Managing Director.

J. R. T. Hay had been with the Company for 42 years, and he had been a director for 37 of them. When he first came to Twyfords, bulk materials still arrived by canal; the bottle ovens had another 20 years or more left to pour smoke out over the potteries and mechanical handling was a thing of the future. The six towns were still relatively isolated; there were few motor cars or bus services, and rail-links were indirect and difficult.

For the men in the factories, working a 47-hour week, the work was hard and sometimes dangerous. Only three women were employed in the offices, and most of the typists were men. Jack Hay can remember the days when only £30 was ever kept in the safe, in case of burglaries, and even much later, he recalls organising trips to the coast and London, when few employees had ever seen the

sea or the metropolis - much less been overseas.

Twyfords was exporting to countries all over the world, when in 1926 the fastest route to a place like Calcutta was 17 days. In the late 1960's, it took 14 hours by 'plane.

His years in office had been among the most eventful of any the Company had experienced since the heady days of the 19th century. With the succession resolved and the overseas operations running successfully, the Board decided to restructure the Company to bring it in line with the developments of the past few years.

The parent Company changed its name to Twyfords Holdings Limited, and the Group was divided into three autonomous manufacturing and trading companies in the UK, South Africa and Australia - each with its own Board of Directors, and answerable to the holding company for achieving agreed technical and financial objectives. The change came into effect in April 1970, and henceforward, the UK Company was to be known as Twyfords Limited.

Though non-manufacturing the holding company would be responsible for overall policy, management and financial control as before with David Barritt as non-executive Chairman; H.F.H. Barclay as Chief Executive.

During the years of overseas expansion, the composition of the Board had changed considerably. Cowan Douglas had died in 1962, and in 1968, after 19 years on the Board, W.T. 'Crusty' Cross had retired. The new holding company was now joined by Sir Eric Jones, a former senior civil servant and director of Simon Engineering, and J. M. L. Harris, who had succeeded Norman Richards as Secretary, and was now replaced in his turn, by G. M. Yates. Subsequently, H. V. Flather retired, and D. G. Clarke and N. R. Hancock joined the Board of Twyfords Limited.

The first year of the holding company's existence was a record year. In the second year, turnover was up again by more than 20%, and profits by an even higher margin. In such favourable circumstances, it was decided to introduce a shareholding scheme for employees.

All those of five years standing or more became eligible for an interest-free loan, repayable over two years, to buy up to 200 of the company's ordinary shares.

Perhaps, not surprisingly, the response was enthusiastic. In the past two decades, Twyfords had re-established its position in the home market, and developed a worthwhile presence overseas. The staff who had contributed to its current success and prosperity could now own a stake in it too.

CHAPTER SIXTEEN

Joining Forces

An observer viewing Twyfords in the Spring and early Summer of 1971 would have seen a bustling and extremely robust company. Two years of record turnover and a striking increase in profits had left it stronger and more resourceful than ever before.

As standards of domestic hygiene continued to improve, the home trade was thriving, helped along by higher Government standards, following the publication of the Parker Morris Report, which laid down minimum requirements for public housing.

The South African subsidiary was making a substantial contribution to profits, and although exports now accounted for less than 25% of the business, they were nevertheless quite healthy.

In the four years of his tenure as sole Managing Director, Harry Barclay had brought together a management team generally acknowledged to be second-to-none in the industry. The future had never looked brighter. It must have seemed that way too, to a number of companies who were viewing the markets that year, with a predatory eye. Twyfords was ripe for take-over.

At the beginning of June, Glynwed approached the Company through an intermediary with an offer of a merger, but after some discussion, the Board decided that this would be neither to the employees, nor the shareholders advantage. Not satisfied with this, in July, Glynwed notified the Board that they would now be making a firm offer, and the same day appealed directly to the shareholders by releasing the news to the press. Battle was now well and truly joined, with Glynwed competing for the shareholders' favours and Twyfords trying to hold the bid off. A formal offer document appeared in August, and a rebuttal document soon followed. Superficially at least, the Glynwed offer was in many respects, an attractive one. As well as kitchen appliances, heating systems and building materials, they could offer a range of cast-iron and steel baths, showers and washbasins - and in this area, they too had a South African subsidiary. Their product range was both relevant and broadly based.

But it was felt it would be difficult for Twyfords to maintain its corporate identity within the Glynwed Group, and there were strong financial arguments against the deal. Twyfords had an impressive track record in both profits and growth, and the bid, which involved Glynwed shares and unsecured local stock, was considered to be far too low. It was decisively rejected. Glynwed were not so easily shrugged off, and in early September came back with a new, considerably increased bid, amounting to some £11.3 million.

In the meantime, however, Reed International had intervened, offering to take

Twyfords under their umbrella as a defence against further bids. In theory, this proposal was more amenable to Twyfords' directors, and two days after the renewed Glynwed offer, it was made official. In practice, it was even more attractive, since it offered significantly better prospects, and added up to a total of £12.5 million. The directors recommended acceptance, and the shareholders agreed.

Reed International is, of course, a huge organisation with total sales in 1971 in excess of £500,000,000. But paradoxically, its very size and structure promised Twyfords a full measure of autonomy. The Reed business world-wide was then divided into four main areas.

- The Reed Group, manufacturing paper, board and packaging material.
- Reed Decorative Products, principally involved in paint, d-i-y products, wallcoverings and fabrics.
- The International Publishing Corporation, publishers of the Daily Mirror, Sunday Mirror and the People; of trade and consumer magazines, and books
- and finally, Reed Overseas, with parallel interests outside the UK.

Twyfords was now to become a founder member of a fifth division, along with Key Terrain, a Reed subsidiary in plastic plumbing and drainage. It was to be called Reed Building Products. In the new division, the company could be confident of retaining its identity and traditions; the well-being of its employees was assured, and to a very large extent, it would continue to control its own destiny. But in addition, it would now be underwritten by the resources of a large multi-national group, with all the advantages which that would bring in terms of future security and expansion.

Inevitably, as with all take-overs a certain amount of re-organisation was necessary. The non-executive directors, Chairman Sir David Barritt, Leopold de Rothschild and Sir Eric Jones, all agreed to resign. Harry Barclay became the new Chairman, Norman Richards was appointed Managing Director, and Geoffrey Yates appointed to the Board.

As Reed Building Products Division was formed, there was also a mutual transfer of directors. In future, H.F.H.Barclay would sit on the Key Terrain Board, while Building Products Chief Executive, Michael Collins, and director Alistair Davidson would join Twyfords.

The Company was to retain its 26% holding in Hindustan Sanitaryware & Industries, but for both commercial and organisational reasons, Twyfords South Africa was transferred to Reed Corporation (Pty.) Limited and Twyfords Australia to Reed Consolidated Industries. (Both business were later sold during a rationalisation of Reed overseas companies).

The benefits of becoming a member of the Reed group were soon to become apparent. Plans had already been laid, before the take-over, to make further extensions at Alsager to cope with increasing demand - and with Reed's backing, these could now go ahead without delay. The centralising of Twyfords' warehousing operation was completed, when the buildings were considerably

enlarged to deal with export, as well as home despatch, from all the potteries. The making shops were also substantially extended, and a new tunnel kiln - Number Ten - was built, and first lit in 1972.

At that time, natural gas became available, and the kilns and boiler plant were converted from oil - a change which saved the company many thousands of pounds a year.

It was then, in the early 70's, that people first discovered 'the energy crisis', and a threatened reduction in the electricity supply looked like slashing production by more than a third. Twyfords installed auxiliary equipment to help bridge the gap, and come the Heath Government and the 'three-day-week' early in 1974, this really came into its own. Thanks to the new generators, production was scarcely damaged at all.

In the meantime, however, despite the new extensions, the company's production facilities were still fully stretched, and after studying market reports and projections of the likely future demand, a major expansion was decided upon. Mapped out by Gordon Clarke over Christmas 1972, this was to be the biggest yet. At 220,000 square feet, actually larger than the original factory. It was to house three new tunnel kilns, each 355 feet long, and increase Twyfords total capacity by a staggering 30% - with the result that the annual fuel consumption at Alsager came to equal that of a town with 27,000 inhabitants.

A new gas main was laid to supply the kilns. A new flint mill was built, and a new and much larger sliphouse. The new mill, which replaced the old one at Cliffe Vale, was designed to supply calcined, crushed and milled flint direct to the sliphouse in slop form, while the new sliphouse itself was built with fully automatic weighing and conveying systems to blunge and prepare ball clay slip and handle china clays. At the same time, the clay stacking area next to the sliphouse was also conveyorised, so from one unloading point, clays could be handled into stock or directly into use.

Perhaps more importantly, inside the Works, a revolutionary new development was taking place in the making. Because of the complexity of many of the pieces, particularly closets, mechanisation had necessarily been slow in coming to the sanitaryware industry. This was now changing. Various methods of multiple casting had been tried over the years, and as the new extension was built, Twyfords introduced the latest refinement of the art - 'battery casting'. A typical battery consists of four benches, each bench carrying 50 or more moulds (depending on the pattern of washbasin being produced). These moulds are filled with slip, piped direct from a storage tank - the excess after casting being 'blown' from the mould and re-cycled for re-processing.

The crucial point being that the process can be completely automatic, and that before the final skilled 'fettling' or hand finishing takes place (which includes punching the tap and waste holes), the operator has only to loosen the clamps and remove the ware from the mould. The resulting increase in productivity was significant, and without any reduction in quality, making time per unit was drastically reduced.

The continual expansion of Alsager obviously brought with it an increasing number of new employees. As the workforce grew, so new facilities were built to serve their needs, including a large new car-park, new offices for production management and a brand-new, 300-seat canteen, with an adjoining lecture room - its menu based on a survey of employees favourite meals.

Having been built from the ground up in 14 months, the new extension went into production in September 1974.

It was not only through the Company's own expansion, however, that Twyfords was to gain from the take-over, but also through the development of the new Building Products Division. In 1974 PWP Glazing Products of Hixon joined the Division. PWP made a unique form of shatterproof shower screen, consisting of a resilient and colourful laminated sandwich of glass and resin.

Harry Barclay now took on an additional role as Chairman of the engineering division, while Twyfords' newly appointed Assistant Managing Director, Geoff Yates, became responsible for the operation and profitability of the Company and he also became Chairman of PWP.

The acquisitions by Reed continued with the take-over of Sphinx of Maastricht in Holland, in 1974, and of Walker Crosweller of Cheltenham, in 1975. Sphinx is one of Europe's largest manufacturers of ceramic sanitaryware, refractory goods and tiles - the latter now being among the most popular brands marketed in Britain. Walker Crosweller make 'Mira', the country's leading thermostatic shower fittings, as well as taps and mixers, and flow-measuring instruments.
Though neither Company is in any way directly involved with Twyfords, their association has nonetheless been mutually beneficial. Reciprocal managerial and technical cooperation with Sphinx, for instance, has resulted in useful exchanges of information, which have enabled Twyfords to take advantage of Sphinx body formulations and glazing techniques, and Sphinx to mechanise their casting methods, based on Twyfords' experience with battery casting.

But their relationship is advantageous in a more general sense too, since their combined presence in the group has meant that Reed Building Products are able to offer a complete range of bathroom equipment.

This was recognised in a corporate sense in 1976, when Reed Building Products formed its own Bathroom Division, and the following January, opened 'The Bathroom and Shower Centre' in London's Great Portland Street.

With 5,000 square feet of display space, the Centre was designed to give both the trade and the consumer the opportunity to see the entire divisional package, featuring products by Twyfords, Key Terrain, Sphinx and Walker Crosweller.

As well as showing the products in a variety of settings, it also provides free professional planning and design advice for both distributors' showrooms and customers own bathrooms - and at the last count, was receiving more than 25,000 visitors a year

Though in many respects, the years after the take-over were good ones for

Twyfords, the period of the mid-seventies was a difficult one for the industry as a whole. After the Arab oil embargo of 1973, the sanitaryware business was not alone in having to deal with a sudden and acute slump in trade.

Twyfords, more strongly based than most, was able to ride out the worst of it, despite the drop in demand, with a reduction in output from its existing factories of less than 10%. The magnificent new extension at Alsager, however, had to be closed after only two months pilot production in 1974 - with the inevitable result that many employees faced a period of short-time working. In the event, these difficulties proved to be relatively short-lived (though the recession was clearly here to stay), and by 1975-76 Twyfords' sales were once again, higher than they had ever been before. The extension was re-opened in the early part of 1978, creating 100 new jobs and providing an opening for 40 trainees in casting.

In succeeeding years, despite enduring problems in the sanitaryware market, Twyfords own position has continued to improve - a fact which the Company attributes to a number of different factors. Through technical innovation, it has made and continues to make important economies in production. It pursues a sustained programme of new product development; maintains a continuing dialogue with the trade, and does its best to bring an innovative approach to its sales and marketing.

All things of which Thomas William Twyfords would have undoubtedly approved.

CHAPTER SEVENTEEN

The Future Emerging

The repercussions of the Reed take-over - the reorganisations, expansions and additions - took some years to be fully assimilated by Twyfords. But what emerged at the end of it all was a Company much better equipped to face the future.

Where other historic names in the industry had grown via a series of mergers and amalgams, Twyfords was able to develop its own resources, in its own way. Under the Reed umbrella, it had as promised, been left to 'grow its own timber'. With extra capacity and increased mechanisation, it could begin to re-assert its traditional pre-eminence in the bathroom market. The Company was now a great deal stronger in every respect.

In 1976, Norman Richards retired as Managing Director after 46 years with the Company. He had joined the Company in 1930 as its first trainee and, after a period on the Works where he learnt useful practical experience, his career progressed on the sales side both in Home and Export. He served as an Officer in the Royal Artillery during the 1939-46 war and was demobilised with the rank of Major. In the post-war years, he progressively became Company Secretary, Administration Director and later Managing Director. He had given considerable help and advice to the Board and had played a large part in dealing with industrial relations and improving conditions of employment. He had helped, during his period as Managing Director, in monitoring the expansion of the Alsager factory.

G.M.Yates became the new Managing Director, and was joined by M.L.Fox and G.T.Forrester, who became Engineering Products and Ceramic Production Directors respectively. L.O.Tench subsequently joined the Company as Marketing Director; Company Secretary, Ian Pengelly became Finance Director, and T.P.Nealon, came to represent his Company on the main Board. The addition of PWP proved to be of immediate value in developing Twyfords' product range.

The products developed by PWP enabled Twyfords to build a presence in the rapidly expanding shower market. By 1980, 'Colorarmour' shatterproof screens and enclosures had been joined by a new range of folding and sliding surrounds, manufactured in Germany by a British owned Company called Huppe - and demand had grown to such an extent that a separate sales organisation was established for showers alone.

People were now becoming more conscious of personal hygiene than at any other time in recent history, and this could be clearly seen in their changing attitudes to the bathroom.

The luxurious was increasingly replacing the utilitarian, not just in the wider

fantasies of image advertising, but in everyday reality. Twyfords was among the first of the mass market manufacturers to recognise this fact, and developed its product range accordingly.

Throughout the 1970's, more and more new models began appearing in the catalogues - new shapes in baths; new designs in basins. But most striking of all during this period, was that colour came back into the bathroom.

The conventional pastels were augmented and eventually replaced by more positive shades, and these in their turn were supplemented by altogether stronger colours. Twyfords 'Pampas' - one of the most popular of all modern bathroom colours was launched in 1966, and in 1979 the old pastel Primrose was finally withdrawn, after 47 years of sterling service. Thereafter, and into the 80's, new names came thick and fast, so that in 1982, Twyfords could offer approaching a dozen colours, including soft brown 'Mink', deep 'Damask' red, and a new shade called 'Almond' which harked back 50 years or more to Twyfords celebrated 'Ivory'.

By that time, in spite of continued difficult trading, Twyfords found itself in a more secure and successful position in the market that it had enjoyed for some time. It could claim, once again, to be Britain's leading bathroom manufacturer.

In the Spring of the following year, H. F. H. Barclay decided that the time had come to relinquish his day-to-day responsibilities in the running of the Company. He had often expressed the view job too long, and that with the pace of change in both the industry and the market, the Chief Executive's position was becoming a job for a younger man. Choosing his moment, he now put this view into practice. For the time being he would remain as Chairman in an advisory capacity, and continue his career as a director of Reed Building Products.

But his duties as Chief Executive devolved upon Managing Director, Geoffrey Yates, who was also now a member of the Reed Building Products Board. Leslie Tench became Deputy Managing Director; E.W.Birch was made responsible for personnel, and completing the new team, Terry Henwood was appointed Director of Home Sales.

Like J.T.Webster before him, Harry Barclay had already had senior management experience before he joined Twyfords, (he had been Deputy Sales Director of the builders' merchants, Metal Agencies). Partly as a consequence of this, his rise through the ranks of the Company's management had been unusually rapid. Within five years of joining Twyfords, he was made sole Managing Director, and was in effective control of the Company's destiny for the next 15 years.

During that time, he had planned and helped establish Twyfords Australia, and guided the parent Company through the difficult waters of the take-over. Thereafter Twyfords had experienced one of the most fruitful periods of its long history. There had been considerable expansion in both plant and product.

A modern system of industrial relations was developed, with joint consultative committees and generally improved internal communications, and the process of democratisation in Twyfords (which had begun with J.R.T.Hay) continued with a

further devolution of responsibility throughout the management structure. Like another of his predecessors, E.H.Bailey, Harry Barclay had also played a major role in the industry's trade associations.

In 1968, he became a member of the Council of the British Ceramic Research Association, and a year later, was appointed Vice-President of the European Federation of Ceramic Sanitaryware Manufacturers. In 1971 and '72, he became first Vice-President and then President of the British Pottery Manufacturers' Federation. (In this capacity, he was host to H.M.the Queen and H.R.H. Prince Philip, when they visited the Potteries on the 25 May 1973).

During his years of office, he had successfully presented the industry's case to the Monopolies Commission for the continuation of its export agreements, and initiated the British Bathroom Council Advertising campaigns to promote the sale of bathrooms in the UK on an industry-wide basis.

In the 20 years since H.F.H. Barclay had joined Twyfords, the industry had changed, perhaps less dramatically than in the previous two decades, but nonetheless significantly. The introduction of the tunnel kilns and mechanical handling was revolutionary, but rather than being a culmination of technological innovation, it was just the beginning. As the Alsager factory was extended, Twyfords' engineers pioneered improvements in kiln design, achieving a number of notable firsts, particularly in the areas of fuel economy, and the control of body and glazing faults in ware. Advanced flow-line techniques were developed in production, and in the vast new Alsager warehouses, palletisation of bulk stocks was introduced for container transport.

When battery casting had arrived, Twyfords had based their system on one patented by Armitage Shanks, but the Company had gone on to develop its own systems, and was soon leading the industry in the techniques of multiple production.

By the early 1980's, it was racing ahead with automation in casting; 40% of its production was already to some extent mechanised, and research was under way finally to mechanise the making of the WC. (the most complex procedure of all). This was not only beneficial in the obvious sense of greatly increased output, but also in terms of improved health and safety - bench casting and automation creating, as they do, a vastly cleaner, more dust-free environment.

New materials too had been adopted, if not in the ware itself, then in the development of safer, more effective glazes and in other areas of the manufacturing process. Since the early days, case moulds (from which the working mould is taken) had been made from plaster of Paris, which was fragile and short-lived. This was now replaced by glass fibre impregnated with epoxy resin, which as well as making better fitting, more accurate moulds, lasts upwards of 10 times longer!

Similarly, cistern syphons, once made in lead antimony, then copper and pottery, came to be made in injection-moulded polypropylene - a substance which cannot rust or corrode and is actually lubricated by water.

In recent years, standardisation in sanitaryware has been growing - especially since Britain's entry into the European Economic Community.

In the late 1970's, a special committee was set up to discuss and approve standards for European sanitary pottery, and among its many and varied deliberations, it was decided that the old square tap-holes should be withdrawn, and replaced by round ones with a minimum diameter of 30mm.

A standardised 'P' trap outlet for water closets was also agreed upon, with a special connector which converts to the 'S' trap formation - the theory being that as this gains universal acceptance, it will reduce stock-holding for both manufacturer and distributor.

It seems highly unlikely that we shall ever arrive at Buckminster Fuller-style bathroom modules, with everything crammed into one compact, super-ergonomic unit.

But there is nevertheless, an increasing tendency to look towards inset basins, wall-hung WCs and ducted plumbing as a method of achieving a much neater bathroom, which is easier to clean and more straightforward to fit.

This is also reflected on the contract and institutional side of the business, with panel-assembly sanitary units, an idea pioneered by Twyfords, where a variety of appliances and fittings can be pre-plumbed onto special laminated panels, which hide away pipes; can be fitted in one-piece and are very simply maintained.

Fashion develops in the bathroom probably slower than any other area of domestic design. But as the second smallest and smallest rooms have become less of a utility in the mind of the consumer, changes in attitude and styling are beginning to accelerate.

A typical example of this is the changing perception of that very sensible, but very un-English device - the bidet - sales of which have increased by more than 30% over the last ten years, and will no doubt continue to do so.
Despite the occasional resurgence of traditional white ware, it is also apparent that colour will grow more, rather than less, exotic.

For the first time in 70 years, Twyfords' latest range includes decorated bathrooms such as 'Indian Pearl' (a vine-leaf design dating back to the 1880's), and among its most popular lines, features two-tone coloured effects, with a deeper shade superimposed over a lighter one, as if in shadow.

Finally, after half a century, the basic shape of the bathroom is beginning again to change - possibly more that it has ever done before. The smoothly rounded forms, which have predominated since the late 1950's (to a certain extent, since the 19th century), are now giving way to more geometric designs like that of Twyfords 'Debut' range, launched in 1981 - and there is every sign that this distinctive, more linear kind of styling is where the future lies.

The history of the bathroom has been a strange and disjointed progress.
Though it was perfected in essence in the time of the ancients, it was swept away

and all but lost to us. It took a millennium to make its painful, prodigal return, and then, with the help of men like the Twyfords, it burgeoned in little more than 50 years of the most amazing inventiveness and artistic device.

The glories of Victorian plumbing may have disappeared in the first decade of the 20th century, but the pioneering spirit of these men survived their wares. To them and the Companies they founded, we owe the levels of public and domestic hygiene that we so easily enjoy today, and none more so than Twyfords.

Next time you go to the bathroom, you might like reflect on what it may have been like without them.

1874, in his ‘Sanitary Arrangements for Dwellings’, Mr. W. Eassie reflected that ‘Nothing can be more satisfactory than a good water-closet apparatus, properly connected with a well-ventilated sewer’.

It is a sentiment with which we can all heartily concur.

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