CHAPTER IV

Clay From The Heath

EXTRACTION OF Purbeck ball clay has been one of Dorset's major industries for the past two centuries. The whole gargantuan operation has slithered across the heath over the seven miles between Creech and Newton, carrying with it men, cranes, sheds and railway engines to lift new seams; and leaving behind a lunar landscape of sticky white hillocks that were soon reclaimed by the tough heathland flora and stand full of wild colour above the former workfaces. These, the claypits of Purbeck, filled with water and now have their own charm, especially in late summer when red, yellow and white water-lilies flower across the shallows, but also at all times because the waters are translucent with strong shades of turquoise refracted from the clayey bottoms.

One such abandoned claypit, the Blue Pool at Furzebrook, is among Dorset's most commercialised beauty spots. It was created by the Pike brothers from Devon who prospected in Purbeck at the middle of the eighteenth century and bought Furzebrook House in 1760. The Blue Pool is the fifty-foot deep hole they dug only four hundred yards from their back door. This pit was one of the first large-scale workings and it established their business fortune, leading eventually to Pike Brothers, Fayle and Company which is now absorbed into the giant combine of English China Clays. The operating subsidiary is E.C.C. Ball Clays Limited with offices at Wareham.

The old Purbeck company had celebrated its bi-centenary in 1960, before the takeover, and produced a booklet looking back to its beginnings: "Apart from grading, turning and weathering, it is doubtful whether, in the early days, the clay was subjected to preparation. But it must be remembered that the blue clays of the Bagshot beds are the finest in the world. They fire a near white and their small and uniform grain size and consequent unequalled plasticity make them an important ingredient of bodies for the manufacture of most earthenware and pottery."

Though they were unaware of it, the Pike brothers revived an industry that had flourished long before them—in the hands of Celtic potters during the Roman rule. Clays were collected on the heath and taken to a string of workshops and pottery kilns along

the shorelines of Poole Harbour. Two kilns, a short distance south of Shipstal Point, lie on the very edge of the saltings and the old shore can still be seen. Whilst the kilns are now over a hundred yards from the high tide mark it should be remembered that the mud-flats have been reclaimed by the rampant growth of *Spartina townsendii*, the grass of the salt-marshes, since the early 1800s. The kilns were carefully sited where their wares could easily be removed by boat. Similarly, kilns at Fitzworth Heath and Cleavel Point—the west spit of Newton Bay—are beside the safe harbour beaches. Remains of a hut, probably the home of a potter, have been found nearby on Fitzworth Point.

Up the Frome at Stoborough, north of Nutcrack Lane and close to Redcliff Farm, another group of potters had their wheels and the discarded sherds of pots that misfired have been frequently found. These wasters, substandard work rejected by the potters and smashed on a heap, can sometimes be found in large quantities and it is a scattering of broken pottery that usually betrays the existence of a kiln below the ground. Because of the dense ground cover along almost the entire line of the old coastline, which is both lonely and long, deeply indented and hard to explore, it is likely that many more Romano-British pottery kilns are awaiting discovery. Samples of the pottery already uncovered can be seen in the more comfortable surrounds of the County Museum at Dorchester.

In 1952 it was noticed that some molehills beside Nutcrack Lane to the east of Stoborough contained fragments of pots. A small excavation revealed a vat of puddled chalk with a clay lining, four feet in diameter and two feet deep with a central plughole at the bottom, together with five or more holes in the rim. There were more potsherds amongst its ashy filling and these dated from about the end of the first century. The whole basin-shaped tub was carefully lifted and taken to the museum at Dorchester where it was displayed under glass for many years. But the vat—a potters' pit for puddling clay—unfortunately disintegrated in 1970 whilst being moved to a new position inside the museum.

Such dating evidence as has been scrutinised points to these potteries having been worked by native Britons during the first two centuries of Roman control and then abandoned by the craftsmen who moved to the valleys of the New Forest uplands where a larger and more sophisticated pottery industry was developing. After this decline the local craft virtually ceased until an industrial revolution in the outside world opened the real era of Purbeck clay in the eighteenth century.

Clay brought the first prosperity known to the poverty stricken Purbeck heathlands and came, ironically, from the most barren parts of the landscape. Its latter day exploitation largely started with the Hyde family of Poole who dug clay from under cotton-grass bogs at Arne. Their operations started in the late 1600s and they became leading exporters of pipe-clay. The time was right for speculation in clay as imports of tobacco and tea were becoming substantial and this meant demand for pipes and teacups. As pewter was at the same time being replaced in public houses by earthenware mugs there were prospects of steady growth in several directions. Thomas Hyde, born in 1731, was the notable member of the family and the man who dominated the politics of Poole corporation for twenty years. The doors and windows of his Poole house were "all smashed" in an election riot in 1769 and Hyde's colourful history is given in Barbara Kerr's "Bound to the Soil". By the 1770s, Hyde was living at Arne and paying £30 a year for mining rights. His contracts included an agreement to supply Josiah Wedgwood with 1,400 tons yearly of potters' clay from the Rempstone estate. Thomas Hyde's business fell in the slump of 1792 and the extraction of clay ceased at Arne. Few signs have survived his operations and nothing remains of Hyde's Quay where a projection of firm land touches the Wareham Channel on the west side of the Arne peninsula. Clay was shipped from there to Poole. Russel Quay at the seaward end of the long road from Stoborough, reached by a track of white sand across the heath from Arne, is another survival from the early clay trade.

Donkeys carried those first loads of commercial clay, the raw material, to the quays at Arne and from the early pits at Furzebrook to the river at Wareham where it was also loaded into small sailing boats. At Poole the clay was transferred to sea-going vessels and shipped to the Mersey ports and from there overland to Staffordshire where, in 1759 at Etruria near Stoke-on-Trent, young Josiah Wedgwood had started a business. Other major customers were in London and at Queenborough in Kent. Clay for the Thames estuary was carried up the Channel by sailing barges. After 1770, when the Trent and Mersey Canal opened, Staffordshire increased its capacity and demand for raw clay, leading directly to the growth of new pits and clay works in Purbeck. The importation by the pottery towns of china clay from Cornwall had also started.

The abortive Dorset and Somerset Canal, as envisaged in 1793, would have connected Poole Harbour with the Bristol Channel and had as its two main prospective sources of income the Somerset collieries and potters' clay of Purbeck. It was intended to build the

canal to avoid the passage round Land's End by cutting across the southwest peninsula of England and that, for the clay boats, would have provided a far easier access to Bristol and the route from there to Staffordshire. Part of the canal was actually constructed in the colliery district but the entire illfated scheme ran out of money in 1803. Its owners had already abandoned the intention of reaching the Dorset coast and were going to stop at Shillingstone on the Stour. A result of the collapse of the Dorset and Somerset Canal Company was a meeting in the Red Lion Inn at Wareham on 26 November 1825, chaired by John Calcraft MP, that supported moves to build a railway costing up to £300,000 and running from Poole Harbour to the collieries at Radstock. Nothing came of this project either: the effects of canal mania and the subsequent growth of the early railway system had failed to arrive in Dorset.

Sailing barges remained the basic means of distribution until radical changes followed the successful cross-Channel voyage of the tiny vessel *Sirius* in 1837 when she became the first ship to complete a voyage under steam alone. On land, the first stages of an efficient distribution system were created by Benjamin Fayle, a London potter, who opened his claypits at Norden, a scattered heathland settlement one mile from Corfe Castle, in 1795. Fayle avoided the Pike family embarkation point at Wareham and used instead an old cart track across two-and-a-half miles of heath to reach Middlebere Lake, an inlet of Poole Harbour, a mile from the deeper water of the Wytch Channel.

Benjamin Fayle learned of the early railways from his customers in the Staffordshire potteries and considered one might provide a workable alternative to sending poorly laden donkeys and horse and cart transport across the rough heathland roads. He obviously found a railway engineer to undertake the project as the line he established in 1806 has graceful sweeping curves, shallow cuttings and low embankments, and a skilfully gentle gradient that maintains the steady fall of land from one hundred feet to sea level. This ancient mineral railway, working more than forty years before the first main line crossed into Dorset, survived in use until 1905 when it was finally abandoned. Even its closure was not caused by the more attractive proposition presented by the Swanage branch of the London and South Western Railway but because Fayle and Company had completed its own replacement line, no less than six miles long, to link the Norden pits with Goathorn Pier.

Because of its historic significance—it was Dorset's first—the railway of 1806 merits close attention, particularly as it allowed Purbeck ball clay to be marketed in quantity and enabled its

creator, by his foresight, to compete effectively against the Pike family, his monopolistic rivals.

Mineral railways were one of the first technical innovations to be accepted in mines and quarries. In 1803, at a time when their construction was increasing in the North, the Surrey Iron Railway opened and became the first line to carry public loads. All these lines, until the widespread introduction of narrow gauge steam engines in the 1850s, were powered by simple horse traction. Nonetheless it was still a bold venture by Fayle to cut a railroad across the wild heathland and connect his claypits with an isolated jetty in one of the remotest regions of Dorset.

The railway was originally called the New Line to distinguish it from the old cart track but it later became known as Fayle's Tramway. The gauge was 3 feet 9 inches and the method of construction was to peg three-foot lengths of L-shaped rail to stone block sleepers (a so-called plateway) the trucks having flangeless wheels. William Stevenson, in an agricultural survey of Dorset in 1812, described the 'trains' as being made up of five two-ton waggons drawn by a horse. There were three such trains when the railway opened, each normally making the journey to the quay three times a day, though more trains had to be run as the tonnage increased.

Even though the building of the Swanage branch of the national railway system was to cut directly through the Fayle claypits in 1885, the private railway was still maintained, chiefly for the exportation of foreign orders for clay. These shipments started in barges at the jetty on Middlebere Quay and were transferred to ocean-going vessels at Poole Quay. Middlebere is tucked away in the far reaches of the tidal estuary of Poole Harbour with extensive mudflats and never a possibility that the vast banks of silt could be dredged to make a wharf for deep water ships.

Shortly before the arrival of the mainline, Fayle's railway had been mechanised by the introduction of *Tiny*, a steam engine built apparently by Stephen Lewin of Poole in 1868. It was an outside cylinder 0-4-0T, looking small and box-like, appearing as a cross between a modern tractor and a child's toy. The driver had an open cab. *Tiny* survived in regular use for over seventy years and was scrapped about 1948.

In 1905 this first engine was joined by *Thames*, a locomotive built by Manning Wardle (an outside cylinder 0-4-0ST) which had been made in 1902 and used for a short time by the London County Council at the Barking outfall sewer. The year 1905 sadly meant the end of Fayle's Tramway, discarded after virtually a century

of continuous use. Some stone sleepers can still be seen at Middlebere and a few retain the iron pegs that held the rails. There are also the decaying timbers of the jetty together with a ruined building. On the heath east of Hartland Moor there is a cutting and a long low embankment then carries the line over some marshy ground. Near Langton Wallis cottage is a gap where a short section of steep embankment across a stream was swept away when the culvert blocked after the railway was dismantled.

It is possible to trace the line today from a pair of tunnels under the main Wareham to Corfe road a short distance south of the bridge over the Swanage branch line. Patrick Henshaw has drawn my attention to one of these, about six feet wide and seventy-five feet long, as it is still open right through and the west portal has a stone inscribed "B.F. 1807". Through the tunnel, on the east side of the road, the line passes Norden Cottages, Hartland's Farm, New Line Farm (preserving the original name of the railway), Langton Wallis—and then stretches away from the scattering of valley settlements in gradual descent across Middlebere Heath, along the low ridge above Slepe, and lastly to its final curve round Middlebere Farm ending at the quay and jetty.

With the redundancy of one railway, Fayle and Company embarked upon the creation of another: a surprising project to cut a new mineral line across six miles of the solitary and desolate heaths over which Thomas Hardy and his pen were then brooding at Dorchester. This century has seen the cessation of railway building with the advance of the internal combustion engine and the second decisive Fayle project was one of the last but most extensive private plans to be undertaken in this country.

Years before, in 1852, the Admiralty had given permission for a wharf at *Goat Ord Point*—the tip of Goathorn Plantation—and by 1868 a fresh series of claypits at Newton were in full production and a railway ran from there to the South Deep of Poole Harbour at Goathorn Pier. Newton Clay Works was a sizable concern and with its opening the labour force of Purbeck clay workers reached a total of 350 men, earning between twelve and seventeen shillings per week on piece-work.

The effect of the building of Fayle's Tramway had been dramatic as it created new jobs and enabled the claypits to expand across hundreds of acres. It allowed Fayle to break the Pike monopoly in Purbeck clay. The growth of the industry is shown by the statistics for three indicatory years: in 1802 the output of clay from Purbeck was only 14,796 tons; in 1808, when the tramway was operational, it had risen to 22,000 tons; and by 1859, with the

establishment of new clay workings at Newton, the quantity shipped through Poole had reached 50,000 tons a year. Potteries were appearing during the nineteenth century on the furzey hills between Poole and Wareham, producing glazed earthenware drainpipes, bricks, tiles, pots, cups and saucers. A growing market for domestic goods followed the boom years when the demand had been for mass-produced building materials for the Victorian new town of Bournemouth and those endless sprawling red-brick suburbs of older towns across Britain.

All this led to the second ambitious burst of railway building by Fayle and Company. Their Norden pits were using Fayle's Tramway to Middlebere Quay and the Newton Clay Works had its own wharf a mile to its north at Goathorn Pier. Because of the costs involved in maintaining two outlet routes to separate jetties on the shore of one water, Poole Harbour, it was decided to dispense with the tramway—nearing the end of a century's service—and cut five miles of new railway across the vastness of the heath to link the main workings at Norden with Newton Clay Works, its own little railway and the ships at Goathorn Pier which, as it became a timbered jetty reaching out from the point of a peninsula into deep water, was not at the mercy of the tides to the extent of its silted predecessor at Middlebere.

The Goathorn Railway opened in 1905 with the same unusual 3 feet 9 inches gauge as the tramway. It had engine sheds at Eldon Sidings, to the west of the Corfe River at Norden, for *Tiny* and the new locomotive, *Thames*. From there the track crossed the small river and passed uneventfully through small fields on the edge of the heath to Bushey without nearing a single building and then east away across the lonely wastes of Brinscombe, Claywell and Newton Heath. The line here is now a public bridleway and hard pressed on both sides by conifer plantations which have transformed the region since the war. At the east end of the forest, where the line comes out on to a remnant of the Great Heath, there are traces of a siding and a limeworks. The Goathorn Railway, the longest mineral line in Dorset, was abandoned in 1937 with the decline of Newton Clay Works. During its short life the railway was worked by *Tiny* and *Thames* with about twenty-four waggons and an improvised coach for taking children from Goathorn and Newton to school at Corfe. On several occasions the railway was used to transport Purbeck stone. In 1924, for instance, much of the stone for the Training Bank, a breakwater at Poole, came on the Goathorn line to the wharf. Each train had ten trucks, and each truck three tons. At Poole the rubble was dumped from ships for the

middle core of the breakwater and settled on top of ten-ton blocks already lowered for the base. Among the last of the old sailing ships that came to Poole Harbour for clay were some graceful wooden vessels from Italy. The barquentine *Patria* and a brigantine, *Avvenire*, arrived in the 1920s to load ball clay for Savona in northern Italy. At the present time about 12,000 tons of ball clay a year is exported from Poole and other ports are also used but on a much smaller scale.

A Poole man, W. H. Froud, recalls the clay industry at Goathorn and Newton during the early part of this century:

> The Dorset Iron Foundry used to look after Fayle's two locomotives and my father and grandfather worked on them regularly. On some occasions in the years before 1914 I went to Goathorn with them. In those days the pier was regularly used for steamers that called to take the clay to London. They were generally Henry Burden's boats from Poole.
>
> There was one cottage at the pier, then occupied by the foreman, William Tubbs. This has now been modernised. The hamlet of Goathorn consisted of a number of cottages occupied by workers at the clay works, a small school and a locomotive shed. There was a resident schoolmistress and the school was attended by the small number of children who lived at Goathorn. On Sunday afternoons a church service was conducted in the school by a visiting parson and organist from Swanage.
>
> The only communication with the outside world, except by boat, was along the railway to Corfe Castle and I believe that on Saturdays the people were taken on the railway for shopping—and the nearest public house.
>
> The ships ceased to call at the pier in 1914 but the works continued some years longer. In the 1930s the school was closed because of the decline in the number of children, and the remaining ones were taken to Corfe on the railway. One of the waggons was covered in as a passenger coach and the county council had to pay the clay company for the service. The hamlet and works, together with the railway, were abandoned by 1939.

The closure of Newton and Goathorn was made irreversible during the latter half of the war when the area was occupied, shelled, bombed and devastated by the allied armies as they waited to be unleashed on the French coast. In more peaceful times, the ruins of the old buildings have been pulled down and at Goathorn a farmer, J. P. H. Warner, has rebuilt the least damaged cottage and lives there now. The shape of the claypits can still be seen at Newton; the pier juts into the harbour from Goathorn, and embankments and cuttings are all that survive of the dismantled railway.

After the war, in 1948, the remains of Fayle and Company's railway system was reduced to a couple of miles of track at the worked-out heart of the old Norden pits and in fresh ground on

the other side of the main road, at mines south of Little Coppice immediately below the Purbeck ridge at Knowle Hill. With the scrapping of the two old steam engines, the small remaining length of railway was relaid on the more common 1 foot 11½ inches gauge in 1948 and the *Russel*, a 2-6-2T built by the Hunslet Engine Company in 1906, was bought from a disused iron mine in Oxfordshire. It had originally worked on the Welsh Highland Railway. At the same time, the old waggons were replaced by V-shaped, all-metal side tipping trucks. The *Russel* was scrapped in 1953 and replaced by diesel tractors. Five of these were still in use and housed in a shed at Eldon Sidings until 1969. Trains of metal trucks full of white clay continued in operation, and occasionally crossed the main road, though several pieces of rolling stock were abandoned and rusting on overgrown arms of the railway. The railway closed in 1970 after a long period of decline and the last lengths of track have been ripped up.

In 1949 the two Purbeck clay companies merged into Pike Bros., Fayle and Company Limited. At Furzebrook, nearly two miles northwest of Norden, Pike Brothers had developed their mines —and as the Fayle enterprise stretched eastward to Goathorn, they had moved in the opposite direction to the rich deposits at Creech and Povington. The Pike railway to the sea, opened in 1866, runs north from Furzebrook in a dead straight line across two miles of heath to Ridge Wharf on the River Frome. Barges holding about fifty tons of clay were towed by steam tug down the Wareham Channel to Poole. Sidings and the clay works itself were built near Ridge Farm and later moved from there to Furzebrook. The railway gauge was 2 feet 8½ inches (a section of rail is still embedded in the Arne Road) and the first locomotive, *Primus*, was an 0-6-0T having a low boiler, high chimney and bought from Belliss and Seekings for the opening of the line. Then the line took a different course from later years and extended southward on its same straight course at Furzebrook, by Railway Cottages, finally turning west to avoid the Blue Pool and finishing in pits north of Blackhills.

Another 0-6-0T engine, *Secundus*, cost £690 when it came to the line in 1874 and had a long working life, becoming a spare engine for a number of years and finally being taken to a transport collection at Birmingham; it is the only Purbeck clay railway locomotive to be preserved. By 1886, when a third engine, *Tertius* (an 0-6-0WT built by Manning Wardle) joined the line, the Pike railways extended southwest from Furzebrook to the pits around the prehistoric Icen Barrow and John's Plantation in the rough country towards the Grange Road. These workings, and others dug at the

turn of the century are now lakes and have become the most beautiful gems of the Purbeck heath: they have wide sheets of water smothered with the colour of water-lilies in July and August, and are remote and lovely.

The Pike railway system was still expanding towards new pits in 1889 when *Quartus*, a four coupled engine 0-4-2WT, was bought secondhand from a Leeds company. About this time the greatest of the Purbeck pits was being dug, a deep hole behind Old Bond Street at the Grange Gate. Today it too is filled with water, has a resident flock of Canada geese and many ducks and is overhung by the dense foliage of the Breach Plantation. The great open lake is surrounded by impenetrable undergrowth and trees, and even where the water comes within forty yards of the Grange Road you are unable to obtain more than a poor glimpse.

Further extensions of the line took it to the region of small, old fields held by numerous belts, woods and banks of trees to the north of Creech Grange. The railway then reached to Povington where today there are extensive pits inside the army ranges, and still in full production, though without their original life-line. It was also during this century that the railway threw an elaborate offshoot with several sidings extending south through the remains of earlier pits to Blackhills, Cotness, East Creech, and as far as the eastern slopes of Creech Barrow. A couple of pits at Cotness are still in use.

Other engines working the railway system in its heyday were *Quintus*, *Sextus* and *Septimus*. The first was a domeless 0-4-0ST made by Manning Wardle in 1914 and the other two were 0-4-2ST types built by Peckett in 1925 and 1930. Wooden waggons were used all across the Pike network and at one time over a hundred were in regular use. All the steam engines were ousted by diesel tractors in the 1950s and the entire railway closed in the 1960s. The Pike railway system had extended three miles from Furzebrook to West Creech and also developed numerous sidings including that intricate layout to Cotness and East Creech.

Opencast claypits are now less fashionable and the inconspicuous underground mines have become far more important. There are many of these in unlikely positions such as underneath the well known viewpoint of Creech Barrow, and each has a narrow gauge (about 1 foot 10 inches) incline railway with cable-hauled trucks operating between the workface and the surface. Underground the men wear blue boilersuits and miners' helmets, and cut the clay with pneumatic spades. Waggons are winched up long tunnels to

the sheds which are partially visible and set at an angle at the head of the mine.

Traditionally, the clay used to be cut in chunks about a foot square and transferred at the head of the shaft into the larger trucks of the mineral railway. Trains went to the weathering grounds and along the top of hillocks of clay, to tip their loads on to great heaps. There it stayed for six months whilst it was frequently turned over and aired to improve the plasticity of the clay. This has all been done away with by modern methods which also remove the necessity for trains. The name of the clay, 'ball' is also an echo of the past, deriving probably from *tubal*, a type of spade used formerly in the pits.

Having closed their railway, Pike Brothers use lorries to transport clay—most of it coming from under the army ranges at West Creech—to the processing works, a collection of sheds covering ten acres at Furzebrook. There are still sidings of the Swanage branch of British Railways at Furzebrook but road transport takes most of the clay out of Purbeck. The processing methods crush and shred the clay, remove moisture and put it through various stages of dry mixing, before turning it into a fine powder blown through air flotation mills. After shredding, blending, drying and granulating, the clay is artificially weathered—subjecting it to alternate cutting, soaking, pressure sprays, moving and further soaking. The effect of two years' weather on the clay is achieved in only a matter of weeks.

These processes have greatly speeded the output of clay from Purbeck and with the exploitation of the extensive deposits under the Lulworth and East Holme Ranges at West Creech and Povington, the total quantity leaving Purbeck is currently well over a hundred thousand tons each year. Only a quarter of this comes from the few remaining opencast pits and these are opened only where the over-burden above the clay seams is under thirty feet deep. Underground mines provide the bulk of the production, and operate mainly on a mining principle that starts with a shaft being bored into the ground at an angle, then becoming a 'drift mine' following the seams under the heath. Clay seams are usually found two or three together in veins that the workers call *lenses*. Each lens covers several acres and can be between fifteen and fifty feet thick. In common with other strata in Purbeck, the lenses lie at an angle to the land above, and are covered by an over-burden of sand and loam anything from a few feet to more than two hundred feet deep. The output of the Purbeck ball clay industry was 130,856 tons in 1965 from nineteen workings and the total workforce num-

bered 201 men. The principal workings were drift mines and shafts beneath the north face of the Purbeck Hills where, according to the Dorset County Council's planning department, "estimates suggest there may be as much as four million tons of clay". Ball clay, despite this, is a rare substance and John Cooper, managing director of E.C.C. Ball Clays Limited, told me reserves are definitely not adequate for the foreseeable future. Suggested reserves for the security of the industry and its customers were given by the old Ministry of Housing as at least sixty years' supply. The 1971 price of high quality ball clay was £5 to £10 a ton depending on the degree of processing.

Purbeck claymining, unlike many other traditional mineral industries in southern England, has not suffered a decline. This is because the deposits of the raw material, much of it having the finest grain size and therefore the highest plasticity, still lie in quantity under the Great Heath. Layers of clay are consistently similar in texture and sufficiently thick to allow the use of pneumatic spades on the workface. The two old Purbeck clay companies were able to adapt to the full mechanised methods necessary for any historic industry to continue working in a competitive world where vast imports from overseas have caused many of Britain's traditional mineral extractions to cease. Local ownership of the Purbeck pits ended however in 1968 when English China Clays paid £30,000 cash and £1.2 million in shares to acquire Pike Bros., Fayle and Company. In June 1971 E.C.C. Ball Clays Limited gave me a list of its present workings: *Mines*—Aldermoor, Creech Barrow, East Holme, Grange, Greenspecks, Killwood, Norden 6, Norden 14, Ridge Heath and North Trigon. The last is outside Purbeck and lies in the Piddle valley two miles from Wareham. *Quarries*—Holme Priory, Gadle Nap, Povington, Norden, Trigon, Aldermoor and Squirrel Cottage at Holme Lane. *Works*—Furzebrook Clay Store, Furzebrook Shredders, Furzebrook Drier, Furzebrook Mill and Control Laboratory.

Dorset ball clay continues to be used at home in old established works like Poole Pottery and the potteries of north Staffordshire. The British pottery industry stays concentrated in that one district and fifty years ago it was calculated that no less than seventy-two percent of the country's male pottery workers were living there. Demand for ball clay from Dorset had developed originally when other Staffordshire potters imitated the new skills found by the Wedgwood family and from their studies came salt glazing, the use of moulds, and the realisation that more care had to be taken when

selecting clays for their colour and consistency. Ball clay fires white, or near white, when heated in an oxydising atmosphere to between 1,000 and 1,400 degrees centigrade.

Although the Staffordshire potteries still take considerable quantities of ball clay, over sixty percent of the Purbeck output is now either directly exported from Britain as a raw material or leaves as finished articles produced by the ceramics industry. Exports go to almost every European country, America, Australia, India, South Africa and many smaller nations. About two hundred workers are now employed in the Purbeck mines, pits and clay works. They are maintaining a wealthy industry that has enjoyed success for two centuries and left us a physical legacy in the very shape of the land. The effect of the old methods of working has been to create on the Great Heath between Povington and Norden a landscape unequalled in Dorset.

Industry on this scale was bound to upset the geography of the region but it displaced surprisingly few people in the process. The area was poor and extremely thinly populated. The only habitations were such as Killwood: a lonely cottage beside a spring and amongst some small and ancient fields on the mixed soils of sand and chalk to the north of Knowle Hill. It has now disappeared but went probably because of the extinction of the heathland crofters rather than through the ramifications of nearby pits and shafts. On the other hand the destruction of Arfleet Mill on the Corfe River to the north of the castle was a definite loss, especially as fifty-five years ago corn was being ground in the old building, continuing an industry which had been carried on at that place throughout the middle ages. *Alfledesmulle* was recorded as its name in 1318. Even after Arfleet was demolished, the area was only lightly scoured but it was needed mainly as an access to deeper workings beside Rollington Wood. The sluices, mill pond and t[illegible] of a picturesque setting are gone and the Corfe River itself takes a miserable, overgrown course through the only depressing corner of the Purbeck clayfields.

In the future it is likely to be conservation aspects that cause most controversy. E.C.C. Ball Clays Limited holds a lease to the whole of the Arne peninsula and inland as far as Stoborough Green. Drilling started in March 1971 as part of an extensive geological exploration of the area to establish its potential reserves of ball clay. Industry will inevitably return to the region of the Roman pottery kilns and the rushy ponds where Thomas Hyde had his clay pits two centuries ago.

Pike Brothers, Fayle and Company obtained a lease at Arne

from Colonel Harold Scott of Encombe in 1950. Planning permission was given in 1957 for clay extraction at Froxen Copse, an attractive belt of old woodland, on the extreme north of the peninsula between the Wareham Channel and Arne Bay. This mining consent has not been taken up and English China Clays now prefer to have a co-ordinated plan for an extensive exploration of the Arne clayfield before starting any operations.

The main conservationist opposition is on the ground that the wide areas of furze at Arne are the habitat of the country's principal colony of the Dartford warbler, *Sylvia undata dartfordiensis*. This is one of Britain's rarest breeding birds and it has been on the verge of extinction for most of the last hundred years. Apart from the natural threat of snowy winters, at Arne it has also had to survive the devastation of the region by battle ranges, used by allied troops rehearsing the Normandy landings. The Royal Society for the Protection of Birds holds a reserve to the south of the Shipstal road, specifically for the conservation of the warbler. English China Clays will not do any prospecting in this area and the completed mining proposals, when submitted for planning permission in 1972, will not touch the reserve. No less than 3,016 acres, however, of the heathland at Arne has been scheduled by the Nature Conservancy as a "site of special scientific interest" and forms "an outstanding example of Dorset lowland heath". The Conservancy gives the ecological rating of most of Arne as "nationally important".

The coming objections to the Arne clayfield will not be about the bird sanctuary itself but the wider issue of whether the existence of suitable habitats elsewhere at Arne is essential for the survival of the birds. It is ironical that the clay surveyors, having for so long changed entire landscapes completely as they wished, are now faced with having to ensure the conservation of about a hundred tiny birds.