

A GUIDE TO THE
Archaeology
of
DARTMOOR



DARTMOOR NATIONAL PARK AUTHORITY

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INTRODUCTION

This is a guide to the archaeology of Dartmoor. The word 'archaeology', in its purest sense, means the *study* of the material remains of our past, although we now commonly use the term to refer to the visible remains in the landscape. The archaeology of any area illustrates the way in which people have responded to the local environment – to the geology and vegetation which have given them building materials, and the minerals which have contributed to the local economy; to the fertility of the soils and the climate which have dictated the way in which the landscape has been farmed; and to the topography which has influenced where settlements are sited and where communications have been established.

The archaeology of Dartmoor is very special. Within today's wild moorland landscapes, dominated by heather and moorland grasses, can be found extensive remains of past human activity – much now reclaimed by nature. Here can be seen prehistoric ritual and burial sites, some dating as far back as the fourth millennium BC; field systems and settlements three and a half thousand years old; medieval farmsteads and associated fields established nearly ten centuries ago; and remains of a tin industry which is certainly 700 years old and possibly much older, and which only ceased during the early years of the 20th century. Other, more recent industrial activity is also recorded in the landscape.

The exceptionally good survival of Dartmoor's visible archaeological remains is largely due to the durability of the local granite used for building, and to the limited extent of modern exploitation and intensive agricultural development on the moor. Much of Dartmoor's archaeology is now recognised as being of national and international importance.

Dartmoor offers a chance not just to view a collection of individual and isolated monuments left over from the past but also a rare opportunity to discover complete and integrated *landscapes* that illustrate the way in which people have lived, worked and died for more than 6,000 years. Where else, for example, can be found over 10,000ha (25,000 acres) of prehistoric fields, and associated dwellings?

Dartmoor has often been described as an archaeological *palimpsest* – meaning that it is possible to read the landscape like a book with transparent pages, so that the remains of each period of occupation are visible through those of later times. Any tract of land on the moor might well contain a variety of monuments dating from 4000 BC to the present century. These landscapes and their monuments are important sources of information about our history, and provide a tangible link with our distant and not so distant past.

The individual monuments and features which make up these complex and rich landscapes are numerous. This booklet is an introduction to many of the earthworks and stone structures which any visitor might encounter, but it is not comprehensive; such a work would be many times longer than this. Standing buildings (and their ruined counterparts) are not, by and large, included.

The booklet is divided into four sections – prehistory, medieval, industry, and byways and boundaries. The first three sections begin with a general description of the relevant period, offering a context for the visible archaeological remains. These are followed by illustrated glossaries of the main types of monuments which may be seen. Those monuments described in the general section which appear in the glossaries are given in capital letters in colour the first time they appear. Although reference is sometimes made to the artefacts (objects) made and used in the past, these have not been illustrated. A brief explanation of the terms used to describe the different prehistoric periods appears on page 6.

Individual sites are only mentioned, exceptionally, where it is necessary to illustrate a particular point in the text. This is not a guide to sites of interest, for these extend into many thousands, and there is no gazetteer. The purpose of this booklet is help you to recognise the different types of monument that are on Dartmoor.

There are probably as many as 11,000 individual archaeological monuments on Dartmoor; many of these are protected by law (the *Ancient Monuments and Archaeological Areas Act, 1979*), and it is a criminal offence to damage or interfere with them in any way. You should be aware that some sites, particularly those associated with past mineral working, can be dangerous.

Some technical terms are used in the text. Most are explained in the glossaries. Frequent use is made of the term millennium – a period of 1,000 years; thus the second millennium BC represents the period between 2,000 and 1,000 years before the Birth of Christ (BC) and the first millennium AD (Anno Domini) represents the first 1,000 years after that event.

KEY

Key words which appear in the text in green type refer to specific illustrations in the glossary. The symbols below are repeated at the top of each page and provide easy referencing between the main text section and the relevant glossary pages.



PREHISTORIC DARTMOOR



MEDIEVAL DARTMOOR



INDUSTRIAL DARTMOOR



BOUNDARIES AND BYWAYS



PREHISTORIC DARTMOOR

The terms mesolithic, neolithic, Bronze Age and Iron Age have been used in this booklet. These are the conventional terms used to divide up the long period known as prehistory, and chart technological development. The mesolithic (or middle Stone Age) identifies a period between about 8000 and 4000 BC, when tiny flint tools were produced. The neolithic period (or new Stone Age: c.4000-2500 BC) saw the introduction of different types of stone tools, the domestication of plants and animals, and the construction of large megalithic monuments. During the Bronze Age (c.2500–600 BC), metal working began and a rich array of archaeological sites and features, both ritual and secular, survive from the period. In the Iron Age (c.600 BC–AD 43), as the name suggests, the development of iron-smelting occurs, and the creation of large defended settlements known as hillforts.

However, we are becoming increasingly aware that these terms are an oversimplification and that change was much more gradual and less easily defined than was once thought. Nevertheless, since most people are familiar with these nomenclatures, they have been used in this booklet.

EARLY VISITORS

8000 – 4000 BC

The Mesolithic Period

By 10,000 BC, the last ice-sheets had receded and the climate became warmer. This resulted in tundra-like vegetation of southern England changing to a landscape of trees. Studies of buried ancient pollens from Dartmoor show that by 8000 BC it had a mainly oak woodland cover along its river valleys and lower slopes, giving way to mixed deciduous trees (predominantly hazel and birch) on higher ground; whilst the highest areas were open moorland containing a few isolated trees.

The large animals that had grazed the tundra grasslands were replaced fairly rapidly by the woodland species of deer, wild oxen and pig. This change had



an important consequence for the hunting and gathering lifestyle of the prehistoric people living in the area. The woodland animals were less gregarious than the great herds which had lived on the tundra plains, and the woodland environment supported fewer animals – thus the food supply was reduced, and hunting became more difficult. It is probable that at this time Dartmoor would have been used as a seasonal source of food (not only of meat but also of nuts and berries), with mesolithic peoples moving between the inland and coastal areas of Devon during the year.

Pollen and peat studies on Dartmoor have shown that throughout the mesolithic period, particularly between about 5500 and 4300 BC, small clearances in the woodland cover were created, some as a result of fire; the inference is that this was the work of humans. Wild animals would have been drawn into the clearings to graze, and once there, could be killed with relative ease. The combination of burning and grazing began the slow spread of the blanket peat bog which now covers so much of the high moor. In this way, the conversion of a forest to today's open landscape began.

Evidence for the presence of mesolithic people on Dartmoor lies in the scatters of worked flint known as *microliths*, which have been found in areas of disturbed ground. These microliths, or projectile points, are often found near springs and could represent the sites of temporary hunting camps.

MONUMENTS OF THE FIRST FARMERS

4000 – 2500 BC

The Neolithic Period

The neolithic period in Britain witnessed a gradual change from a wandering lifestyle to a more settled one, as both animals and crops were domesticated and the deliberate cultivation of food plants was introduced.

On Dartmoor, as in other upland areas, hunting remained important. Pollen evidence from various locations has indicated some clearance of larger trees and their replacement by herbs, grasses and weeds of cultivation. Timber was felled using heavily polished or finely chipped stone axeheads. Flint was still being worked; the microliths were replaced by tools such as knives, blades and scrapers. The leaf-shaped arrowheads of flint of this period which have been found on the moor are evidence for the continued importance of hunting at this time.



It is from this period that the earliest visible structures survive – the **CHAMBER TOMBS**. These are stone-built chambers within which multiple burials were placed, and which were sited at one end of long earth and stone mounds. Their construction must have required the co-ordinated labour of a cohesive community, and they may well have also served as landscape markers, defining sizeable territories. Their dilapidated appearance today does not reflect adequately their former significance.

During the fourth millennium BC in other parts of the south-west, territorial centres developed, controlling perhaps relatively large territories. Two such sites have been tentatively identified on Dartmoor – at Dewerstone Rock and White Tor, where low stone walls encircle the tors.

CEREMONY AND RITUAL

c 2500 – 1500 BC

The Later Neolithic to Early/Middle Bronze Age

The introduction of metalworking and its influence upon prehistoric societies was more gradual than immediate, and the ceremonial monuments of Dartmoor straddle the conventional division between the later neolithic and Bronze Age periods. Lack of modern excavation and research precludes too precise a dating of many of the monuments which characterise this period. However, it is clear that at this time a wide range and number of monuments associated with burial and ritual were being constructed on Dartmoor.

To what degree the moor was being used for other purposes is unclear; its wild animal population would have continued to offer a valuable resource to the hunter. At the same time, continued clearance of the forest cover in the higher regions would have provided summer grazing for domesticated animals domiciled at lower levels. It is also thought that these clearings might have been used occasionally for arable cultivation.

Burial practices underwent a change. The chamber tombs, with their long earthen mounds were replaced by **ROUND CAIRNS** of varying size. Some of the larger examples (such as Giant's Basin at Drizzlecombe) may be of early (ie late neolithic) date. Others, sometimes known as 'prestige' cairns, may belong to the end of this period. These latter cairns are often sited in a prominent position, on ridges or on hilltops, and may have fulfilled twin roles – serving as burials and territorial markers. The larger cairns may at first



have covered a single burial, but it is thought that they, and the area around them, may have been used thereafter for the burial of other members of the family or community.

The smaller round cairns of this period probably mark the site of a single burial. A number of these small mounds cover a **CIST** (pronounced *kist*), a stone box sunk into the ground, into which a body or cremated ashes were placed. A number of cists can be found in association with stone rows (see page 30). Some cist burials are surrounded by **CAIRN CIRCLES** or **KERB CIRCLES** which define the area of the monument. Groups of five or more cairns clustered together are known as **CAIRN CEMETERIES**.

A few examples of **MULTIPLE STONE CIRCLES** have been found on Dartmoor. Here, concentric rings of upright stones can be seen poking up through cairn material.

These burial cairns are assumed to have belonged to the aristocracy, that is, to those individuals who were most highly regarded by their communities. The acidic nature of Dartmoor's soils has destroyed organic material, such as bone, and no trace of the burial itself ever survives. In some examples, minor grave goods have been discovered. These include fragments of decorated beaker-shaped pottery and barbed and tanged flint arrowheads, both of which may have come into the area at the same time as a knowledge of metalworking.

Not all types of cairn can be directly associated with burial. The only examples of a **RING CAIRN** (where a flat area is defined by a roughly circular, stone rubble bank) excavated on Dartmoor revealed no evidence for burial, but are thought to have served some sort of cenotaphic function. Some of Dartmoor's tors and naturally occurring outcrops of granite were ringed by low, stone banks or partially covered by round cairns; these are known as **TOR CAIRNS**. Areas where a large number of small cairns or stone heaps occur are known as **CAIRNFIELDS**. Some of these may contain burials, others may be *Clearance Cairns* and are the result of stone clearance to allow for some type of agricultural practice.

Round cairns and cist burials can sometimes be found at the end of lines of upright stones or **STONE ROWS**. A greater concentration of stone rows can be found on Dartmoor than anywhere else in Britain, but their purpose remains an enigma. The only stone row to have been excavated in recent times is thought to have been erected within a clearing in the woodland



cover. Their association with burial monuments would indicate that they had a religious or ritual significance. It has also been argued that some at least of the stone rows are aligned towards astronomical features or occurrences, such as the position of the sun or moon at one of the solstices. They might, therefore, represent a fusion of the spiritual and the practical. Stone rows may have been used as seasonal sun dials, marking the passing of winter into spring and significant events in the agricultural calendar. To primitive societies, whose way of life was governed by the seasons, it would not be surprising if these features took on a mystical or religious importance. They may also have been territorial centres or boundaries. In more recent times, the parish church has provided just such a complex function – as a religious, social, community and geographical centre.

As with the burial monuments of Dartmoor, there is considerable variety in the architecture of its stone rows. There are both single and double (parallel) rows and even more complex alignments of set stones. The stones themselves vary between the tall and the short; and the terminal features can include burials, blocking stones and menhirs.

The **MENHIR**, a distinctively tall, upright stone, can also be found both near to but detached from other ceremonial monuments and in complete isolation. We assume that, like the stone rows, the menhir served both ritual and practical functions.

Free-standing **STONE CIRCLES**, enclosing an area without any apparent burial, can also be found on Dartmoor, sometimes near stone rows. Their purpose, although probably ceremonial, remains unclear.

THE FARMED LANDSCAPE

c 1700 – 600 BC

The Bronze Age

The middle of the second millennium BC was to see the most intensive use of Dartmoor as a controlled, settled and farmed landscape. Much of the high moor which now offers rather poor grazing for livestock had less acidic soils during the middle Bronze Age, and was valuable pasture land. The widespread clearance of much of the remaining tree cover at this time, together with intensive grazing, accelerated the formation of peat.



The Bronze Age is the earliest period on Dartmoor from which the visible remains of houses and allied structures survive. Round stone structures, the ruins of which are called **HUT CIRCLES** or **ROUND HOUSES** and of which perhaps more than 5,000 examples survive today, were the standard building form. They were constructed of drystone granite walls and would have had conical thatched roofs supported on a timber frame. Some may have been shelters for shepherds or were seasonal dwellings; others may have been more permanent dwellings; yet others may have been used for the storage of cereals, housing of animals or as weaving sheds and so on. It is important to remember that what we see today are the remains of buildings which, when fully equipped and in use, would have been much more spacious and comfortable than their present derelict appearance would suggest.

Recent archaeological excavations have found that some of the stone-built huts had timber predecessors which have left no trace above ground and that, indeed, the remains of stone buildings visible today may have had contemporary timber structures nearby.

Many hut circles are located near river valleys, which were heavily worked for tin ore in medieval times. As both tin and copper (the constituent ingredients for bronze) are to be found on Dartmoor and in the surrounding area, it is not unreasonable to assume that prehistoric people were using these mineral resources. A number of bronze artefacts (axes and palstaves, for example) have been found on the edge of the moor, where the less acidic soils have allowed their preservation.

Hut circles can be found in isolation, in clusters (known as open settlements), within walled **ENCLOSURES** (often called pounds) and within field systems, sometimes attached to the field walls. Near Rippon Tor (not far from Widecombe-in-the-Moor), a single hut stands against a perimeter wall enclosing three square fields, with a yard in front of the house. Homesteads like this are features of the eastern side of the moor. The clusters of hut circles are mostly concentrated on the western side of Dartmoor in the upper river valleys. Enclosed groups occur chiefly in the southern river valleys. Excavation of an enclosure at Shaugh Moor on the south western edge of the moor revealed that the enclosure wall was added some three centuries after the construction of the first hut circle. There was no entrance in the wall, but there were footings for a stile, suggesting that the wall was built to keep stock away from the living area. At Grimspound (eastern Dartmoor), on the other hand, the enclosure wall is substantial and has an imposing gateway, which may indicate a more defensive character.



Our knowledge of the detail of prehistoric animal husbandry is handicapped by the fact that no bones have survived. However, due to a rare circumstance in the past, the footprints of animals alive on Shaugh Moor some three and a half thousand years ago were preserved. During the excavations of a prehistoric field boundary, the footprints of sheep, cattle, ponies and even a badger were discovered in buried soil in the ditch which ran alongside it. In the nearby enclosure were found spindle whorls – used in spinning – and fragments of quern stones on which grain was ground into flour. These show that cereal crops were being grown; but the analysis of ancient pollen indicates that arable farming played a secondary role, and the predominant use of the moor at this time was for the pasturing of animals. Radio-carbon dating from the Shaugh Moor enclosure shows that the settlement was in use for well over half a millenium (from about 1700 BC to 1200 or 1000 BC). The small number of objects recovered during the excavation, as well as the lack of hearths in the hut circles, suggested that this was a seasonal settlement, used by people and animals who spent the winter months at sites on the lower contours. Other settlements, however, may well have been occupied throughout the year.

It is clear that a sense of ownership of land became increasingly important from the middle of the second millennium BC. This has been shown by recent archaeological work on the REAVES, perhaps the most characteristic features of the prehistoric landscape of Dartmoor, dating from around 1500 BC. Reaves (the local name given to prehistoric land boundaries) are now visible as low, stony, earth covered banks. They cover an extensive part of the open moor, although they are notably absent from the north western quarter. Over 200km (125 miles) of reaves have been identified, enclosing over 10,000ha (25,000 acres) of land. They also extended into what are still enclosed landscapes on the fringes of the moor, and many field boundaries in use today have their origins some three and a half thousand years ago.

The reaves offer evidence for a highly organised system of land division, initiated during the middle centuries of the second millennium BC. The lower slopes of Dartmoor were divided from the higher areas by terminal reaves, which ran along the contours. The lower areas were subdivided by parallel reaves running at right angles to the terminal reaves, and the long narrow strips thus created were themselves subdivided by cross reaves. In some areas, especially in the south and west, more irregular boundaries known as contour reaves can be found above the terminal reaves. The landscape seems thus to have been zoned into three divisions – firstly, the most intensively used areas represented by the parallel reave systems; secondly, an inter-



mediate area between these and the contour reaves; and thirdly, above these, the highest, unenclosed land. We can speculate that these zones reflect the way in which the land was used for grazing; the better pastures on the lower areas required more control of stock than those on the higher areas, which may have been used for extensive (as opposed to intensive) and perhaps seasonal grazing, much as the commons of Dartmoor were used during the medieval period.

From about 1000 BC the climate deteriorated. Cooler summers and wetter conditions, together with the formation of blanket peat which produced impoverished vegetation, meant that it became increasingly more difficult to sustain earlier levels of grazing and cereal growing. This probably contributed to a slow abandonment of sites – a retreat to the lower and more easily farmed areas.

THE END OF THE PREHISTORIC PERIOD

600 BC – AD 43

The Iron Age

The final centuries of the prehistoric era saw the gradual introduction and adoption of iron for the manufacture of tools and weapons. The transition between the Bronze Age and the Iron Age was, like that between the neolithic and the Bronze Age, much more gradual than the abrupt change of name implies, and the introduction of iron-working brought about no immediate change. The gradual abandonment of the higher moor continued during this period. Evidence for Iron Age occupation of hut circles has been revealed in excavations carried out at settlements which lie on the edge of the open moor. Radio-carbon dates and pottery from one site (Gold Park, near Grimspound) suggest occupation to the very end of the first millennium BC; in one of the huts at Kestor, near Chagford, evidence of iron-working was found.

The later Iron Age saw the appearance of a new type of site – the **HILLFORT**; about twelve are to be found on the fringes of the open moor. These hilltop settlements of hut circles were heavily defended by ramparts and ditches; they are indications of a society which was becoming increasingly tribal and aggressive in nature. They were probably focal points within large territories, used as market centres and/or areas of retreat.




MEDIEVAL DARTMOOR

Although we know that the fringes of the moor were settled in the later pre-historic period (Iron Age), it is not clear from the evidence so far available how long this occupation continued. The four centuries of the Roman military occupation of Britain (c. AD 43–410) are hardly represented in the archaeology of Dartmoor; the nearest evidence for Roman military presence lies in a temporary fort established in the first century AD just north of Okehampton.

There are signs of human activity around Dartmoor in the immediate post-Roman period, sometimes called the Dark Ages. Inscribed **POST-ROMAN MEMORIAL STONES**, commemorating tribal leaders or princes of the 5th–7th centuries have been found on the edges of the high moor, particularly on the north and west sides. Parish churches dedicated to Celtic missionaries from Ireland and Wales suggest Dark Age settlement; St Petroc, a Welsh missionary of the 5th century, is commemorated at Lydford, South Brent and Harford.

The evidence is too slight for us to be able to reconstruct the Dartmoor of this period, although it does suggest that activity was concentrated on the moorland fringes. Study of buried pollen on the moor to the south of Okehampton indicates that there at least, the open pasture of the prehistoric period was reverting to scrub and woodland, suggesting that the moor was being little used to graze stock.

A slight improvement in the climate in the latter part of the first millennium AD (the centuries preceding the Norman Conquest) brought about a general increase in population; and the resulting need to provide more food pushed farming communities back on to the deserted moor. By this time, Dartmoor was, in agricultural terms, marginal land, providing relatively poor pasture and low crop yields. From this period onwards it witnessed an ebb and flow of occupation; land was taken in and farmed during periods of high population, economic security and favourable weather, and abandoned when these trends were reversed.



From at least the 10th century, areas of Dartmoor which had not been farmed since prehistoric times were recolonised – principally the lower contours of the high moor and the hinterlands of the major rivers. Much of central Dartmoor became a Royal Forest – land reserved for the Kings of England, and later the Earls and Dukes of Cornwall, to hunt deer and other wild beasts. Nevertheless, there were certain rights of pasture granted to farmers around the moor (and indeed throughout Devon) and a number of farms, known as Ancient Tenements, were permitted to be founded within the Forest. Around the edges of the Forest were the Dartmoor commons, where farming communities shared a number of common rights, including grazing.


Typically, the medieval farmer on Dartmoor lived in a **LONGHOUSE**, in which people and animals were sheltered under a common roof – animals at one end, people at the other. The earliest surviving examples are of the 13th century, with walls of roughly-coursed granite.

Remains of these longhouses are found either isolated, or grouped together in hamlets. Small dwellings, outhouses and **CORN-DRYING BARNs** can sometimes be seen in association with longhouses and also small gardens.

It is generally assumed that the animal part of the longhouse was occupied by cattle, including perhaps oxen which were used to draw the plough (see page 39). Sheep were an important element of husbandry in the medieval period on Dartmoor. Animal bones do not survive in Dartmoor's acidic soils, so we lack archaeological evidence for other stock. However, the Domesday Book (1086) records the presence of pigs and goats on a number of Dartmoor manors.

Evidence from charred grains discovered in excavation and from buried pollen samples, indicates that cereal crops were being grown – oats, barley and rye, and to a lesser extent wheat. Often land put down to cultivation was shared between neighbouring farmers, each taking a number of small, elongated strips of about half a hectare (1 acre) each, scattered throughout the large fields lying closest to the settlement sites – called **INFIELDS**. Beyond these lay the **OUTFIELDS**, used for the most part for grazing stock, but which were ploughed and sown with cereals when necessary. The boundary between the farmed land and the open moor was marked by **CORN-DITCHES**.

This practice of sharing cultivated land (probably as a means of ensuring equal distribution of good and bad soils amongst the community) led to the creation, on sloping land, of terraces known as **STRIP LYNCHETS**. Another



common outcome of medieval and later cultivation is **RIDGE AND FURROW**, probably created to produce deeper soils and better drainage. During the later medieval and subsequent periods, the practice of sharing land died out – although not everywhere at the same time – and strips were enclosed (**ENCLOSED STRIPS**) by hedgebanks, either individually or grouped together in parcels, and large areas of land were worked as a single unit.


A number of the farms that were created on the margins of Dartmoor in the early medieval period were abandoned towards the end of the 14th century/beginning of the 15th century. From AD 1300 or so, the climate had been growing steadily worse. Animals were probably suffering through poor grazing and disease engendered by cold and wet conditions, and crops could no longer ripen naturally in the fields. The Black Death swept through Devon in the 1340s and reduced its population by possibly as much as one-third. This enabled some of the Dartmoor farmers to move away from areas where it was difficult to eke out a living. Many of the settlements which were deserted at this time lie just above the present-day boundary between enclosed land and the moor.

These deserted sites do not by any means suggest a total abandonment of Dartmoor, and indeed in the centuries which followed, the area enjoyed a period of prosperity which owed much to both sheep husbandry and tin working.

Wool was an important source of wealth in the later medieval period. A significant amount of land on Dartmoor was owned by the monasteries of Buckland, Buckfast and Tavistock, which contributed to and shared in the prosperity enjoyed by Devon in a woollen industry famed throughout Europe. Archaeological evidence as such for sheep is rather poor, and we have to rely on documentary sources – the records of the monasteries, markets and ports, references to fulling mills (where wool was processed), and so on – to testify to their importance.

The rabbit too played a part in Dartmoor's economy; from the later medieval period it was exploited for food and fur. Artificial buries or **PILLOW MOUNDS** were constructed to provide attractive accommodation, and the rabbits were protected from predators by **VERMIN TRAPS**.

The abandoned medieval sites on Dartmoor exemplify the basic settlement pattern of the area – farmsteads are either found in isolation or clustered together in hamlets. Imposed upon this arrangement (which echoes that of



the prehistoric period) are the villages and towns of the moor. Little study of their origins has been made; nevertheless it is probable that most of these nucleated settlements grew up in the later medieval period (ie after the time of the Norman Conquest). They served as locations of fairs and of markets for the distribution and exchange of goods. The prosperity of three moorland towns – Ashburton, Chagford and Tavistock – was enhanced by their designation in the 14th century as Stannary Towns, for the assaying of tin. Only two settlements have identifiable and datable origins: Lydford was established in the late 9th or early 10th century AD by the kings of Wessex as a *burh* – a settlement defended against possible Viking attack. The Saxon ramparts enclosing the promontory upon which the town was sited can still be seen. The main street and the lanes leading from it at right angles form one of our earliest examples of town planning. South Zeal, on the northern fringes of Dartmoor, was founded in 1299 by the Lord of the Manor of South Tawton, in what proved to be an unsuccessful attempt to create a new market centre. Here can be seen the topography of a typical medieval town – houses along the street frontage, with long narrow **BURGAGE PLOTS** extending back from them. Vestiges of similar burgage plots can be found in other Dartmoor towns.

The classic monuments of medieval times are **CASTLES**, monasteries and **CHURCHES**. Three medieval castles can be seen on Dartmoor – a Norman ringwork at Lydford, and motte and bailey castles at Okehampton and at Hembury, near Buckfastleigh. The three great abbeys of the medieval period were established on the fringes of Dartmoor – at Tavistock (in 981), Buckfast (1018) and Buckland (1278). All have undergone considerable change since the Reformation in the 16th century, and comparatively little medieval fabric can be seen. Church architecture reflects the period of a community's greatest wealth, and on Dartmoor this was to be found in the 15th and 16th centuries, when profits from the wool and tin industries made possible the refurbishment and enlargement of earlier structures. Most of Dartmoor's churches thus exhibit architecture of the style known as Perpendicular.



INDUSTRIAL DARTMOOR

Although now very much a rural landscape, regarded by many as an area of natural wilderness, Dartmoor has in the past witnessed much industrial activity. In particular, it has been a major producer of tin, but also of other minerals such as copper. The industries of Dartmoor are many and varied – mining, quarrying, lime-burning, even arsenic production, gun-powder manufacture and ice-making. This chapter does not attempt to describe all the complexities of Dartmoor's industrial archaeology but looks only at its most typical and accessible features.

The archaeological landscape of Dartmoor is dominated by the remains of the tin industry. There are good reasons for supposing that the rich veins of cassiterite (tin ore) found within the granite mass were exploited by pre-historic peoples although at present archaeological evidence for this is weak. Tin together with copper, which can be found on the periphery of the moor, combine to form bronze, the alloy that gives its name to one of the major periods of prehistory. However, it is the work of the medieval and later tin-miners that has left an enduring impression upon the face of Dartmoor. Tin is not only a major component of bronze but also (with lead) of pewter, which was used extensively in medieval times.

The industry reached its peak in the 16th century AD, but had been important from at least the 12th century (from which time the first documentary record survives). A revival occurred during the late 18th century, and activity did not finally cease until 1930.

Deposits of tin ore are confined in England to Dartmoor and parts of Cornwall; this scarcity rendered it a valuable commodity. In the medieval and post-medieval periods the industry was controlled by the Crown, for whom it was an important source of revenue. In 1201, a charter of King John confirmed the ancient rights of the tinner '...to mine for tine and dig turves for smelting tin, anywhere in our lands, moors and wastes...'. Despite some records of conflict between the apparently opposing interests of tin-working and agriculture, on the whole the two activities seem to have taken place in some degree of harmony; it is thought that tenant farmers may themselves



have been part-time tanners or to have held shares in workings on their land. Dartmoor was divided into four administrative areas known as *Stannaries* (a word deriving from the Latin *stannum*, meaning tin). Tanners were required to bring their ingots four times a year to one of four Stannary Towns (Ashburton, Chagford, Tavistock, created in 1305, or Plympton, created in 1328). Here the ingots were weighed, tested for purity (assayed or *coigned*) and a tax levied upon them. The industry was governed by its own customs and laws, under the jurisdiction of the Lord Warden of the Stannaries and courts were set up to settle differences and right wrongs. A Stannary courthouse and gaol was built at Lydford in the late 12th century, now known somewhat erroneously as Lydford Castle. The last of the Stannary courts is believed to have been held in 1786, and they were formally abolished in 1836. Between 1494 and 1749, 11 Great Courts, or Tanners' Parliaments, are known to have been held at Crockern Tor in the heart of Dartmoor. Here jurates from the four Stannaries met to agree regulations and statutes for the industry.

As well as providing revenue for the Crown, Dartmoor tin brought prosperity to the local population, and funded the rebuilding of many parish churches during the 15th and 16th centuries and the construction of a number of fine houses.

A decline in the industry in the early 17th century was followed by a revival in the late 18th and 19th centuries. This coincided with technological advances allowing underground working, increased demand for metals created by the Industrial Revolution and the development of tin-plating. There were probably some 50 or so mines operating on Dartmoor during this period. Companies were set up under such names as 'The Devon Great Tincroft Tin-mining Company' and 'Dartmoor United Tin Mines'.

Many companies seem only to have lasted a few years before mines were abandoned or restarted under new management. In some of the larger mines, up to 100 people were employed, including women and children. Often the miners travelled long distances from their homes to work, and lived for the better part of the week in dormitories near the workings. The industry declined during the latter part of the 19th century and, despite some activity in the 1920s and 30s, had effectively come to an end after the First World War.

The medieval tanners worked the alluvial deposits of cassiterite, extracting the tin-bearing stones from the beds of streams and rivers, using the flow of



water to wash away the lighter waste materials. Areas of **STREAM-WORKING** are characterised by spoil heaps of small stones in the valley bottoms. Often the spoil is arranged in straight or curving parallel ridges, which were used to divert the water from its original course on to fresh deposits of alluvial tin.

In later times, by the 15th century at least, tin lodes below the ground surface were being exploited. Prospecting for tin resulted in the excavation of **TRIAL PITS** along the lines of suspected lodes. Where tin ore was discovered, it was mined either by the excavation of a line of **LODE-BACK PITS**, or deep V-shaped gullies, known as 'beams' or **OPENWORKS**; most date from the period before 1700. Shallow shafts were sometimes sunk at the bottom of the openworks.

Although **SHAFT-MINING** was practised from the 16th century, most of the mine shafts visible on Dartmoor belong to the late 18th and 19th centuries. Associated with these are the horizontal **ADITS**, drainage or access tunnels.

Once excavated, in order to extract pure tin from its parent rock, the ore had first to be crushed and concentrated. Crushing (known as 'knocking' or 'stamping') and smelting ('blowing') were, from about the 15th century to c.1750, carried out in small stone buildings which we call **TIN MILLS**. The processes were powered by water, which was brought to a wheel adjacent to the mill building via an artificial channel, or **LEAT**. Where crushing took place, the ore was placed upon granite **MORTAR STONES** inside the mill, where it was crushed by **STAMPS**, powered by the waterwheel. The crushed ore was concentrated nearby in **DRESSING FLOORS** and **BUDDLES**, in which water was used to separate heavier, richer ores from the lighter sandy wastes. In the smelting process the waterwheel operated a set of bellows, which raised the temperature inside a **FURNACE**, where the crushed ore was smelted. The molten ore was then poured into a **MOULDSTONE**. The rights granted of old to tanners to dig turves, allowed them to use the Dartmoor peat for fuel in the furnaces. Wood charcoal was also used, and many of Dartmoor's woodlands contain **CHARCOAL BURNERS' HEARTHES**.

Improved techniques introduced in the 18th century led to more sophisticated and efficient processing on a larger scale, although the basic procedure remained much the same. By this time, smelting had largely ceased to take place on Dartmoor. Unlike Cornwall, where the engine house dominates the industrial landscape, water remained the principal source of power on Dartmoor. Often very large **WHEELPITS** can be found close to mine shafts; the waterwheels were used to pump water from underground.



Structures associated with the tin industry can also sometimes be found – tinner's shelters and **BEEHIVE HUTS**, which were probably used as stores. The modern mines also contain the remains of a variety of buildings – accommodation for miners and the mine captains' offices, blacksmiths' and carpenters' workshops and **DRYS**, where the miners could dry out their clothing, and themselves!

Although tin was the pre-eminent industry, other natural resources of Dartmoor have been exploited in the past. The 'metamorphic aureole' around the edge of the granite mass contains a variety of minerals which have been worked – most extensively in the last couple of centuries. These include copper, silver, lead and iron. By the mid-19th century, a significant amount of the world supply of copper came from four mines in and around Dartmoor; the remains of the mines at Wheal Friendship, near Mary Tavy, cover more than 12ha (30 acres). The industry fell into decline towards the close of the century. Micaceous haematite, a shiny iron ore, used mainly in the production of rust-resisting paints, was mined in the area of Bovey Tracey until the 1960s.

In many ways the remains of these industries are similar to those associated with the mining and working of tin – shafts, spoil heaps, wheelpits, leats and workshops. Some of the very few examples of the **ENGINE HOUSE** to be found on Dartmoor, however, occur at the copper, silver and lead mines around its periphery.

Granite has been the predominant building stone since prehistoric times, but was not quarried until the 19th century. Before then, 'moorstone' was taken from the surface. It was used unworked in prehistoric times, and occasionally 'dressed' and/or carved by medieval stonemasons. Before about 1800, granite was cut using the **WEDGE AND GROOVE** method; after 1800 the stone was split by a method known as **FEATHER AND TARE**. Dartmoor is full of granite artefacts e.g. **GATEPOSTS, TROUGHS, CRUSHERS** and **PRESSES, MILLSTONES**; some still in their original positions in fields or farmsteads. Many of these artefacts were manufactured on site, out on the open moor, to minimise the cost and labour of moving heavy stone. **SETT-MAKERS' BANKERS** can occasionally be discovered – crude stone benches used by masons in the preparation of paving stones, kerbs and setts. So also can be seen a few examples of artefacts where something went wrong during manufacture and which were abandoned *in situ*.



The first granite quarries were opened at the beginning of the 19th century, and the industry expanded with the arrival of the railways. Granite from the Dartmoor quarries was used in the construction of London Bridge and the British Museum, to name but two examples.

The Dartmoor peat has been exploited as a source of fuel for generations, for both domestic and commercial reasons. Peat cuttings are best appreciated from the air – from where the long, rectangular strips of the cuttings are easily visible. On the ground they form uneven surfaces.

The **CHINA CLAY** industry, which in its modern form dominates the landscape of south-west Dartmoor, began more than 150 years ago, and the earliest remains now form another part of Dartmoor's industrial heritage.

Many of Dartmoor's industries in the 19th century were served by **TRAMWAYS** or railways. Before the advent of the iron railroad, horse-drawn carts were pulled along granite setts, the best surviving example of which can be seen on Haytor Down.



BOUNDARIES AND BYWAYS

COMMUNICATIONS

Getting from one part of Dartmoor to another has never been easy. The moor is traversed by rivers and streams, difficult to cross, endowed with treacherous bogs and in places lacks easily recognisable landmarks. **CLAPPER BRIDGES** were first constructed in medieval times and the last known example was built in the latter part of the 19th century. Many of the granite **CROSSES** which are so much a part of the Dartmoor landscape were probably erected in the period between the 12th and 16th centuries, and are traditionally considered to have been set up by monks of the great moorland abbeys to mark safe routes across the moor. **GUIDE STONES** were set up from the late 17th century to mark routes for pack horses and 'jobbers' between towns. **MILESTONES** came into their own with the creation of turnpike roads, and most date from the latter part of the 19th century.

BOUNDARY STONES

From prehistoric times, people and communities have established territories, and set up markers in the landscape to define them. Some Bronze Age burial mounds may have served this function. Natural features have been used, prehistoric and medieval monuments reused, and new stones erected for the purpose. They define ownership, manors, mines, military ranges, parishes, and so on.