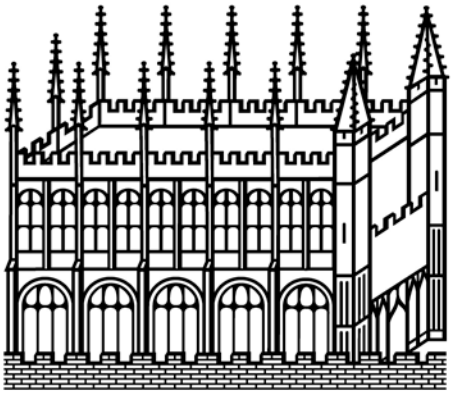

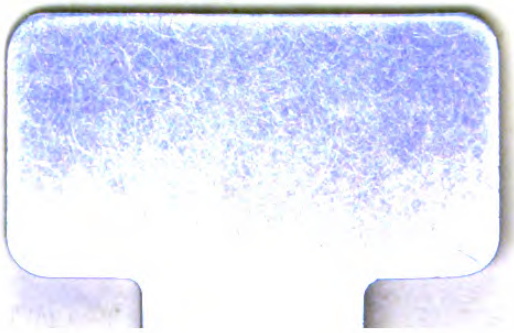

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DUDLEY CASTLE.


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H. H. Kennedy April 9th 1854

RAMBLES

ABOUT

DUDLEY CASTLE.

BY WILLIAM HARRIS.

HALES-OWEN:
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PREFACE.

This little Work is intended as a Pocket Guide to the noble ruins of Dudley Castle, with the enchanting scenery and geological wonders of its locality.

It will be found to combine not only the leading information from Eardeswicke, Plott, and Shaw, (whose works, from their scarcity, can only be found in the libraries of the opulent,) but will embrace the observations of the more recent writers, Payton, Dr. Booker, Smith, Bentley, Scott, Dr. Ick, Sherwood, and others.

In its compilation especial care has been taken to compress it into such a portable size as shall be suitable for the pocket, while no expense has been spared in illustrative engravings. It is, therefore, hoped, that this volume may answer the purpose for which it was intended—that of a popular guide—and be found a pleasing companion to the visitor to this truly beautiful and much frequented spot.

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RAMBLES

ABOUT

DUDLEY CASTLE.

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COMMANDING POSITION OF THE CASTLE---SITUATION ---LORDS OF THE CASTLE---FEUDAL TIMES---BOMBARDMENT IN THE CIVIL WARS---FESTIVE SCENE ---CONFLAGRATION---PARK ENCLOSED---POEM ON THE CASTLE.

This noble relic of baronial magnificence and feudal strength—DUDLEY CASTLE—stands on the bold and elevated summit of a woodland ridge, which rises out of a plain of considerable extent.

It is on the confines of Worcestershire and Staffordshire. Leland says, "Duddeley Castell is hard on the Borders of Wyrcestreshire, but ye Castell self standith yn Stafordshire." Eardeswicke and Dr. Plott concur in describing its situation in the same manner; and we

find, from ancient records, that the boundaries of these two counties were settled in the year 1238.

The first erection of this castle, which gives name to the flourishing town adjacent, is ascribed to *Dud, Dudo,* or *Dodo,* a Saxon lord, "about the yeere of our salvation 700," as Campden informs us; hence it was called *Dud's Ley---home* or *place.*

The next possessor of the castle is unknown, and there are some chasms in its history during the three centuries which elapsed between this period and the Conquest; but it appears to have been possessed by *Leofric,* Earl of Coventry, the husband of the celebrated Godiva; Earl *Algar,* their son; and afterwards by Earl *Edwin,* their grandson.

At the Norman Conquest it was given to *William Fitz Ansculp,* "at which time Richard, Lord of Birmingham, held that manor by knight's service, and was obliged to pay rent, homage, suit, and service; to attend at the lord's court at Dudley every three weeks, and was liable to be called into the field at pleasure." *Fulke Paganel,* who is supposed to have married the daughter of Fitz Ansculp, afterwards became possessed of this castle, who was succeeded by his son and heir, *Ralph Paganel;* and it afterwards descended from Ralph to *Gervase Paganel,* his eldest son, who held it for the Empress Maud, in the troublesome reign of King Stephen. He also resided here in the reign of Henry the Second, which monarch, on account of his attaching himself to the party of Prince Henry, in an insurrection against him, dismantled the castle; but, soon after, we find that the king received 500 marks

as a peace-offering, and the baron was re-instated in his stronghold. In the year 1189, when Richard the First ascended the throne, Gervase was one of the attending noblemen at his coronation.

By marriage it afterwards passed into the hands of the Somerys; but in the time of *Roger de Somery*, on his refusal to attend on the king to receive the order of knighthood when required, the castle and manors were seized by Henry the Third (A.D. 1229). The writ in English runs thus:—"Because Roger de Somery has not appeared before the king, to be girded with a military girdle, the sheriff of Worcestershire is hereby summoned to seize on the honour of Dudley, and all the lands of the said Roger in his jurisdiction, for the king's use, and to keep them, so that nothing may be moved off without the king's permission.—Witness the king, at Wenlock," &c.; but it seems that soon after, being restored to the royal favour, he obtained permission to "castellate his mansion at Dudley."

In the time of Edward the Second it came into the hands of the Suttons. Sir *John Sutton* carried the standard at the funeral of King Henry the Fifth, and being a knight, bore the title of Baron Dudley. The prosperity of the Suttons afterwards suffered a reverse, for in the twenty-fourth year of the reign of King Henry the Eighth (A.D. 1533), *John Sutton*, Lord Dudley, incapable of treachery himself, and unsuspecting it in others, being in pecuniary difficulties, fell into the hands of usurers, so that John Dudley, Viscount Leile, Earl of Warwick, afterwards Duke of

Northumberland, thirsting after the castle, was able to make use of them as his agents to accomplish his purposes. Under his influence, these money merchants, by acts of trickery and baseness, succeeded in dispossessing the baron of the castle and all his property; and he afterwards became so necessitous as to owe a precarious subsistence to the charity of his friends, and hence was sarcastically denominated "the Lord Quandum." The duke, whilst in possession of the castle, made great additions to the buildings, the entire range bearing the architectural character of the sixteenth century. The triumph, however, of this usurpation was but short, for, in consequence of opposing Queen Mary's accession to the crown, he suffered death as a traitor, and his estates were confiscated.

Sir *Edward de Sutton*, son of that Lord Dudley whom the duke had so unjustly deprived of his property, being in favour with Queen Mary, received from her a grant of the castle of Dudley, with immense estates in the neighbourhood, all of which had come to the crown by the forfeiture of the Duke of Northumberland. He died in the twenty-seventh year of the reign of Queen Elizabeth.

By the second of three wives the above favoured subject had born to him two sons, Edward and John. *Edward de Sutton*, Lord Dudley, succeeded him July the 4th, 1586. In the thirteenth year of the reign of James the First, his only son and heir apparent, Sir Ferdinando Dudley, married Honor, daughter of Edward Seymour, Earl of Hartford: he died in his father's life-time, leaving issue one daughter, Frances.

In the fourth year of the reign of King Charles the First (1629), Edward, Lord Dudley, gave Frances, his grand-daughter and heir, in marriage to Humble Ward, Esq., son of a wealthy goldsmith who was jeweller to the queen of Charles the First. Upon the death of her grandfather (1643), she became *Frances*, Baroness of Dudley, in her own right; and in the following March, her husband was created a peer, by the title of Lord Ward, Baron of Birmingham. With great difficulty, and by consummate prudence, he kept possession of his estates under the iron sway of the Parliament and Cromwell, and died October the 4th, 1670, leaving issue four sons, Edward, John, Humble, and William; and three daughters, Honor, Frances, and Theodosia.

Edward, at the decease of his mother in 1697, became lord of the castle, uniting the title he had previously borne on the decease of his father, Lord Ward, with that which he then inherited in right of his mother, the latter, on account of its high antiquity, having the precedence—*Edward*, Lord Dudley and Ward.

He married Frances, daughter of Sir William Brereton, by whom he had four sons, John, Humble, William, and Ferdinando; and two daughters, Frances and Catherine. All the sons died before their father; but the third, William, married Frances, the daughter of William Dilke, Esq., of Maxtoke Castle, and died in the life-time of his father, leaving issue three sons and one daughter, John, Edward, William, and Frances. John died in his minority; Edward married Diana, only daughter of Thomas Howard, of Ashted, in Surrey,

Esq., and died in March, 1704, leaving his lady pregnant, who was delivered of a son on the 17th of June following.

Edward, Lord Dudley and Ward, (grandson to the last lord and also name-sake,) succeeded, who died unmarried, September the 6th, 1731. Upon his death, the title and estates passed to his uncle, *William*, Lord Dudley and Ward, who also died unmarried, May the 10th, 1740.

The male issue having now failed, he was succeeded by *Frances*, his sister, married to William Lea, Esq., of Hales-Owen Grange, by whom she had two sons and several daughters. The youngest of the sons dying, *Ferdinando*, Lord Dudley, was the last of that branch; and he also died unmarried, October the 21st, 1757. The ancient barony of Dudley is now dormant in a female line. On the death of the said Ferdinando, Lord Dudley, the title became in abeyance between his five sisters, who respectively married gentlemen of the names of Smith, Woodcock, Jordan, Harvey, and Briscoe. It is very probable that at no distant period the title will be taken up by Ferdinando Dudley Lea Smith, of Hales-Owen Grange, a promising youth, now about eleven years of age.

The barony of Ward, a distinct title, devolved to the male heir of the first Lord Ward, whose descendant, *John*, succeded to the title of Lord Ward, Baron of Birmingham, and afterwards was created Viscount Dudley and Ward. He died May the 6th, 1774, leaving issue by his first wife (the daughter of Charles Boucher, Esq.,) a son, named *John*, who succeeded to

the title and estates. By his second wife, Mary, daughter of John Carver, Esq., he had two sons, Humble, who died in his infancy, and William. Upon the demise of the said John, he was succeeded by his half-brother, *William*, Viscount Dudley and Ward, who dying April the 25th, 1823, was succeeded by his son, *John William*, Viscount Dudley and Ward, created also an earl by King George the Fourth.

By the demise of this peer, which took place March the 6th, 1833, leaving no issue, the earldom became extinct; but his second cousin and heir at law, *William Humble*, Lord Ward, succeeded to the estates and barony of Ward, conferred upon his ancestors in the seventeenth century. He departed this life on the 6th of December, 1835, and was succeeded by his eldest son, the present *William*, Lord Ward. This peer, to whom we wish long life and happiness, was born on the 27th March, 1817, and came to the full enjoyment of his immense wealth on the 27th March, 1845, on attaining the twenty-eighth year of his age.

The foundations of this fortress may vie in antiquity with any castle in the kingdom; and there is no doubt but its powerful owners were looked up to as petty sovereigns of the district, claiming the homage and service of the lords of many surrounding manors.

The bondsmen or serfs, and the villans or agricultural population, were entirely dependant upon their will or caprice, and he was the greatest man who could command the greatest number of retainers. Whatever restraints the law might inflict, they often exercised absolute power, and the vassals often suffered dread-

fully under the avarice and cruelty of the barons. Of the barbarism of the age we may in some measure form an estimate, from the story of Godiva, the wife of Leofric, one of the feudal barons who inhabited this castle.

This extraordinary and romantic tradition is not only firmly believed at Coventry, but recorded by Matthew of Westminster, who wrote in the year 1307, and also by other ancient historians.

Leofric had granted this city many valuable privileges; but the inhabitants having offended him, he imposed on them very heavy taxes. The people complained grievously of the severity of the taxes, and applied to Godiva, the earl's lady, a woman of great piety and virtue, to intercede in their favour. She willingly complied with the request; but the earl remained inexorable: he told his lady, that were she to ride naked through the streets of the city, he would remit the tax; meaning, that no persuasion whatever should prevail with him, and thinking to silence her by the strange proposal: but she, sensibly touched by the distress of the city, generously accepted the terms. She therefore sent notice to the magistrates of the town, with the strictest orders that all doors and windows should be shut, and that no person should attempt to look out on pain of death. These precautions being taken, the lady rode through the city, covered only with her fine-flowing locks. While riding in this manner through the streets, no one dared to look at her, except a poor tailor, who, as a punishment, it is said, for his violating the injunctions of the noble lady, which had been published with so pious

and benevolent a design, was struck blind. This tailor has been ever since remembered by the name of Peeping Tom; and in memory of the event, his figure is still kept up in the window of the house, from whence, it is said, he gratified his curiosity. The lady having thus discharged her engagements, the earl performed his promise, and granted the city a charter, by which the inhabitants were exempted from all taxes. As a proof of this circumstance, in a window of Trinity church are the figures of the earl and his lady, and beneath the following inscription :—

I, Lurich, for the love of thee,
Doe set Coventre toll free.

Passing down the stream of time, we find that the barons exercised great power, even in comparatively modern days; for, according to the historian Dr. Nash, Edward Lord Dudley, in the 34th year of the reign of Queen Elizabeth, (A. D. 1590), having a dispute with Gilbert Lyttelton, sallied out of his castle, "with one hundred and forty persons, all weaponed, some with bows and sheffes of arrows; some with forest-bills, long staves, &c.; and came with them to Prestwood and Ashwood; and out of Ashwood took three hundred and forty-one sheep, and caused some of his company to drive them toward Dudley; and herewith, not satisfied, entered into Mr. Lyttelton's enclosed grounds at Prestwood, and there, with great violence, chased fourteen kyne, one bull, and eight fat oxen, and brought them to Dudley Castle, and kept them within the walls of the castle." The same historian also remarks, that the said Lord Dudley "did kill and

eat part of the cattle, and some of them he sent towards Coventry, with sixty men strongly armed, some with calyvers, some with bows and arrows, some on horseback, with chasing staves, and other some on foot, with forest-bills, there to be sold." These days of baronial oppression in England have passed over, and under our glorious constitution the cottage of the poorest labourer is now a castle more impregnable than was even this noble fortress in its pristine vigour.

In the civil wars, Dudley Castle was a royal garrison. A battle was fought here in the year 1644, between the king's forces and the parliamentary troops. The castle stood a siege of three weeks, and was gallantly defended by Colonel Beaumont, till relieved on the 11th of June by a detachment of King Charles's forces, sent from Worcester. A severe encounter then took place, in a piece of ground on the east side of Cawney Hill, in which the parliamentary troops were beaten and obliged to retreat, leaving behind them one hundred men dead on the field. Two majors of foot, two captains, three lieutenants, with fifty common soldiers, were taken prisoners.

This castle was one of the last which held out for the unfortunate monarch, Charles; but when its noble keep was battered down, and further resistance was useless, it was surrendered by Colonel Levison to Sir William Brereton, commander of the parliamentary forces (May 13th, 1646). The church of St. Edmund, near to the castle, was also destroyed in this memorable siege. Several cannon balls, some of them thirty-two pounders, have been found among the ruins.

The castle being partially repaired, was soon after this time again inhabited by its noble owners; the plantations were kept in good order, and the park well stocked with deer. The following account of a visit to the last festivity which took place within its walls is from the pen of that pleasing writer, Mrs. Sherwood: she records it as it was related to her by her grandmother, who, when residing in the neighbourhood, visited it in the capacity of lady's maid.

"I was delighted when it was told me that I was to accompany my lady and a friend of hers to the castle, in order that I might be at hand to wait on them next morning, for they were to stay at the castle all night. So we set out in the coach, the two ladies being seated in front, and myself with my back to the horses; and it was quite dark by the time we arrived at the foot of the castle hill, for it was the dead of winter, and the snow was on the ground; however, there were lamps fixed upon the trees all along the private road up to the castle, and there were lights upon the towers, which shone as beacons far and near, for it was a great day at the castle. The horses, though we had four, had hard work to drag us up the snowy path; however we got up in time, and passing under the gateway, we found ourselves in the court-yard. But oh! how different did it then show to what it does now, being littered with splendid equipages, and sounding with the rattling of wheels, and the voices of coachmen and grooms calling to each other, and blazing with lights from almost every window. And the sound of merry voices, and of harps and viols, issued

from every door-way. At length, having drawn up to the steps of the portico, my ladies were handed out by a young gentleman wearing an embroidered waist-coat with deep pockets, and a bag wig and sword; and I was driven to another door, where I was helped out by a foot-boy, who shewed me the way to the house-keeper's room."

Soon after this festivity, the castle ceased to be occupied by the family, and being left in the care of a few domestics, its dark and dismal vaults became the resort of coiners, who, on the eve of St. James's fair, July 20th, 1750, set fire to the buildings, but whether accidentally or with design is not known.

Dr. Booker thus describes this devastating scene:— "On the evening of that day it was discovered to be on fire, and the means of extinguishing conflagrations not being then so efficient as now, the flames raged with unabated fury during three days and nights, till whatever was combustible in the edifice was destroyed. Its roof, chiefly of lead, poured down fiery torrents resembling burning lava, previously to the timbers giving way which supported it. These falling at intervals, were followed by smothering explosions, like distant thunder; while columns of flame rose up to an astonishing height, visible, especially throughout the hours of darkness, for many miles. The stupendous pile, which then seemed a blazing beacon in the time of war, had long been denominated the "Castle of the Woods," on account of the sylvan scenery around it, and fine, no doubt, was its appearance, when, seated as a monarch on a throne, it overlooked the vallies in

peaceful security: but never, perhaps, was it so magnificent a spectacle, as when, illuminated by a consumption of its own glories, it gleamed far and wide, a solemn, though melancholy pageant of departing grandeur! Its coronal of battlemented towers were broken! Its ceilings of vermillion and floors of cedar served but as fuel to complete its fall, and tell the counties which beheld the terrific sight that one of their proudest ornaments was passing away!—while to thousands of the peopled district in the immediate vicinity, who felt themselves identified with its venerated walls, the effect of horror, I am told by one who witnessed the catastrophe, was truly appalling! The daring efforts of some to arrest the raging element in its progress,—the fears of others who stood far off,—those calling to encourage and stimulate their fellows in laudable exertions—those pensive and weeping, with here and there a mother clasping an affrighted infant to her breast,—the flickering coruscations on the trees, which seemed agitated by the dreadful visitation—at one time glowing is if themselves were on fire—at another enveloped in midnight darkness;—such a scene the pencil of a Breughell were alone competent to pourtray, or the pen of a Milton to describe."

After this disastrous event, the castle long presented a ruinous and deserted spectacle of the mutablility of human things. From the dilapidated state of the old park wall, cattle and mischievous persons had free access. At length, to the honour of its late noble possessor, he, after enlarging the boundaries of the park, and enclosing it with an excellent lime-stone wall,

during the summer of 1818, caused avenues to be cut through the innumerable trees he had planted, which now form a series of the most romantic, picturesque, and diversified shady walks, extending over hill and dale, that can possibly be imagined. The views which present themselves, when least expected, are extensive and beautiful.

Grand edifice! uplifted in the air,
As if surveying yonder golden skies,
Where day's bright orb in glory sinks to rest,
And proudly spurning from thy lordly foot
All sublunary things! how is my soul
Impress'd with solemn feeling, when thy courts
Silent I tread.

Emblem of mortal man bow'd down with age!
How chang'd from what thou wert, ere, speeding on
O'er thee a thousand years began to roll!
Then, echoing through thy glades, the warder's horn
Sounded from yonder tower—proclaim'd aloud
Approach of princely guest, with liveried train
A shining band, and knights, for chivalrous deeds
Noted afar, emerging from yon arch.—
Lo! these, methinks, I see to Dudley's chief,
Great Dodo, wending slow their gallant way.

Then, ancient pile! when centuries yet were young,
Adorned in all the majesty of state,
Were seen thy spacious halls, while fairest dames
And warrior champions graced the festal board.

Departed pomp! where are thy glories now?
Thy grandeur all is gone! thy mouldering walls,
Thy monuments,—themselves departing, too,
Will read some chronicle to say *they were.*


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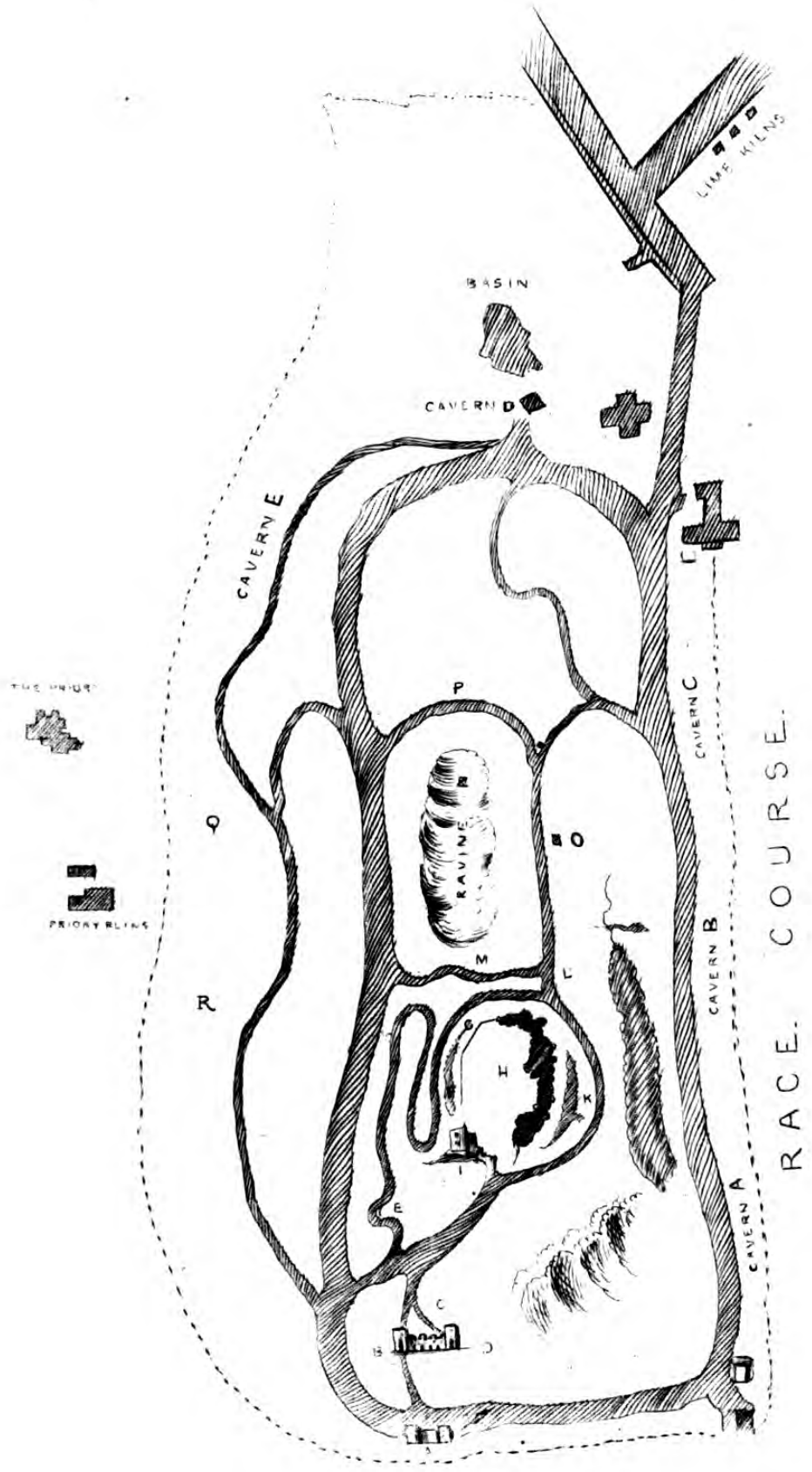

WALKS AND DRIVE.

CHAPTER II.

TOWN LODGE—THE DRIVE—THE WALKS—ASCENT TO THE WARDER'S TOWER—MOAT—AREA OF THE CASTLE—VIEW FROM THE KEEP—EASTERN MOAT TERRACE—GREEN-HILL—PARADISE-BREEZY SEAT—CONTRAST—BELLE-VALE—LOVER'S WALK.

Cesar, the Roman Emperor, being animated with a desire of pleasing his people, bequeathed to them his gardens,—hence Anthony, in his celebrated oration over his dead body, expatiates upon this instance of his munificence with all the eloquence he was master of. And ought not the inhabitants of Dudley and its neighbourhood to feel deeply grateful to the noble proprietors of this castle—who, after planting and adorning the surrounding grounds (thus following the example of the illustrious Roman), have generously thrown them open for the gratification of the public.

> "Left them you
> And to your heirs for ever; common pleasures,
> To walk about, and recreate yourselves."

On approaching the castle, at the bottom of Castle-street, facing to St. Edmund's church, we observe the TOWN LODGE. [*See Ground Plan, A.*] This building was probably erected after the bombardment of the castle, by the parliamentary forces, in the civil wars.

Its gateway, ornamented with massy scroll work (in fashion of Temple Bar, London), marks it as the characteristic architecture of the seventeenth century.

By the liberality and kindness of its present noble possessor, free and equal means are afforded of surveying the wonders and beauties of this place, both to the pedestrian, the equestrian, and to persons in carriages. Therefore, let the visitor fear no angry frown from guard or sentinel, but boldly rap at the lodge-gate, when it will be immediately opened by the keeper of the castle, and admittance given without fee or reward.

If in a gig or carriage, on entering the gates of the Town Lodge, turn short to the right down the gentle declivity (following the directing ☞ of our accompanying ground plan.) This excellent carriage road forms a complete circuit of the grounds and plantations surrounding this ancient ruin. To the invalid, the aged, and the infirm, a ride or drive round this extensive circle must prove a great luxury. At the distance of about two hundred yards the visitor will find another entrance lodge, which is neatly built, in an octagonal form. Leaving this lodge on the right, proceed along the drive, when the upland part of the scenery will be found very beautiful, being a steep clothed with the richest verdure, and crowned with the ruins of the castle. On the right, close adjoining, appears the race-course. The winning chair, starting post, and other objects usual to such places of amusement, will not fail to attract attention.

Passing up this romantic dell, formed rather by art

than nature, (being excavations of lime quarries worked out by open work,) covered by a series of knolls of mingled moss and shade, we behold a building now in a dilapidated state, called the "Miner's Cot," which was erected for the use and accomodation of the miners working in the adjacent lime quarries.

On making a digression from the grounds, an opportunity will be presented of viewing the operation of of lime-burning on a scale of great magnitude, if the visitor should be interested in such occupations.

Following, however, the course of the drive, after making a circuit round these beautiful plantations, we again arrive at the Town Lodge; and a more delightful drive it is impossible to enjoy, whether as it respects diversity, ease to the horses, or beauty of the sylvan scenery. On retiring from the grounds, we cannot but feel pleased with the urbanity shown to us at the lodge, as also with the privilege of such a favour being allowed.

To the pedestrian, a much better opportunity affords itself of enjoying the beauties of this much frequented and lovely promenade. On entering at the Town Lodge, and proceeding up the steep path before us, which is paved with limestone, we immediately observe the WARDER'S TOWER. [*B.*] This tower, with the entrance adjoining, which formed the ancient outer gate of the fortress, is of strong but not striking architecture; the arches are circular, but wanting in that peculiar aspect of ponderous stability which characterises the Saxon style. We ascend its open gateway by eight steps, and passing under its massive

archway, the ruins of the castle appear before us in all their grandeur and magnificence.

Here the imagination will naturally revert to bye-gone days, in considering that this was the chivalrous road where knights and fair ladies, attended by their liveried trains, wound up the steep ascent to the castle.

The ESPLANADE. [*C.*] This is the level space between the Warder's Tower and the formidable gateway to the castle. Esplanade signifies, in fortification, an easy-sloping glacis or bank.

The WATCH TOWER, [*D.*] which forms a picturesque object to the right, is well worthy of observation.—We may almost fancy that we hear the sound of the horn of the watchful warder giving the signal of the approach of some neighbouring baron, and observe the preparation and bustle within the walls of the castle consequent on such an occasion.

It is usual for visitors to pursue the track before them, and proceed at once to view the castle, which is very natural, as the ruins stand so invitingly to view. Let curiosity, however, for a while be suppressed, and, instead of proceeding at once to the strong gateway of the fortress, turn to the left, along a fine green terrace, in front of the cottage, when a narrow path leads into the WILDERNESS. [*E.*] On entering this secluded walk, which apparently loses itself among the trees, we soon find it to be rightly named—it is a wilderness truly, rude, wild, and beautiful. This, although one of the most sequestered and charming retreats about the castle, is least frequented, which perhaps accounts

for the path being so overgrown with weeds as to render it almost impossible for the visitor to trace its mazy windings.

The first object which presents itself in this lonely spot is a spring of water, curiously basoned in a rock, which, with the overhanging foliage, the light appearing through an aperture in the limestone, and other accidental circumstances, combine to render it an object well worthy the attention of the artist.

On pursuing the course of this labyrinth, which leads up the wooded steep, we soon arrive at the CASTLE MOAT. [*F.*] This deep foss, which was filled with water for the use and protection of the castle, demands our attention. The noble keep rears its antique coronal of battlements high above the surrounding foliage in grand and sombre majesty. On passing along this walk, the remains of the ancient GARRISON CISTERN [*G.*] will soon be recognized, which, being partly overgrown with weeds, forms a picturesque object. Crossing the moat (which in former times surrounded the castle) by means of a raised bank, which now occupies the place of a DRAWBRIDGE, forming one of the original means of access to the fortress, we enter, by the northern gateway, the court-yard, or AREA OF THE CASTLE. [*H.*] Here the vast pile of ruins present themselves in all their magnificence, and we are almost rivetted to the spot by the imposing scene which appears before the eye.

> Here let us pause,
> To view this solitary scene. Nought now remains
> Save these sad relics of departed pomp,

These spoils of time, a monumental pile,
Which to the vain its mournful tale relates,
And warns them not to trust to fleeting dreams.
Here Silence keeps her melancholy court
Throughout the walls, save where—in rooms of state
Kings once reposed—chatter the wrangling daws,
Or screech-owls hoot along the vaulted isles.
No more the trumpet calls the martial band,
With sprightly summons o the guarded lists,
Nor lofty galleries their pride disclose
Of beauteous nymphs in courtly pomp attired,
Watching, with trembling hearts, the doubtful strife,
And with their looks inspiring wond'rous deeds.

The KEEP. [*I.*] The ponderous keep, over which eleven centuries have opened and closed since its foundations were laid by Dodo the Saxon, raises its proud head, which, together with the surrounding buildings, present a *coup d'œil* at once grand and imposing.

If the visitor should have a desire to ascend to the summit of the keep, application must be made at the cottage near the Warder's Tower for the key, which for a trifling remuneration may be obtained. The prospect from this eminence is so extensive, that on a clear day the eye may discern the counties of Worcester, Stafford, Derby, Leicester, Warwick, Salop, Hereford, and part of Wales. It is not only extensive, but full of variety, comprising hills and dales, woods and valleys, populous towns and busy seats of manufacture,—a scene which may be justly termed of various view—warm and alive with human habitation.

Should the atmosphere be favourable, upwards of twenty churches are discernible:—those of Dudley,


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DOMINUS

PANORAMIC VIEW FROM THE KEEP OF THE CASTLE.

Birmingham, West Bromwich, Oldbury, Walsall, Wednesbury, Rushall, Darlaston, Tipton, Bilston, Wednesfield, Wolverhampton, Sedgley, Brierley Hill, Oldswinford, and Pedmore; also the fine obelisk at Hagley, with part of the woods at Enville and Himley.

The stupendous heights of Malvern, bounding the southern horizon at forty miles distance, are noble features in the landscape, as are also those of Clent, the Clees, and the Wreken;

Enormous masses of sublimity,

which delight the eye and fill the mind with the most sublime conceptions.

The accompanying panoramic sketch will give our readers some idea of the extent and variety of the scene :—

1. The Keep.
2. Dudley.
3. Cawney Hill.
4. Oakham.
5. Birmingham.
6. Sandwell Park.
7. West Bromwich.
8. Walsall.
9. Wednesbury.
10. Darlaston.
11. Tipton.
12. Bilston.
13. Wednesfield.
14. Wolverhampton.
15. Sedgley.
16. Gornal.
17. Enville.
18. Brierley Hill.
19 Oldswinford.
20. Pedmore.
21 Obelisk at Hagley.
22. Clent Hill.
23. Malvern Hills.
24. Part of South Wales.
25. Abberley Hills.
26. Clee Hills.
27. Part of North Wales.
28. The Wrekin.
29. Hills in Derbyshire.
30. Bardon Hill, in Leicestershire.
31. Barr Beacon.

Having viewed the grand panoramic scenery from

the summit of the keep, and passed under the strong south treble gateway, we proceed to the EASTERN MOAT TERRACE. [*K.*] This lovely green terrace leads close upon a deep entrenchment which is on the eastern side of the castle. On our left we behold the tottering ruin of this impregnable stronghold, the castle—presenting to our view a melancholy picture of the mutability of human greatness. Contemplation may here have her fill, in pondering over the changing scenes presented to us in the theatre of this world.

GREEN, or CONIGREE HILL. [*L.*] This hill, and the spot on which the castle stands, are almost the only part of the grounds which have not been undermined. Proceeding down this beautiful walk a few paces, we find a cross path, which is called PARADISE. [*M.*] This walk presents a picture of smiling beauty and graceful loveliness, for all is "solitude, serene, and mild."

> The warblers are heard in the grove—
> The linnet, the lark, and the thrush;
> The blackbird, and sweet-cooing dove,
> With music enchant every bush.

From an opening we have a fine view of the RAVINE. [*N.*] This deep and craggy dell, wildly romantic and truly sublime, presents to our view a scene of limestone rocks, with here and there immense perpendicular chasms. Vast crags rear themselves in a variety of shapes. These enormous masses of solid rock, with their rude precipices, which not unfrequently project in square masses, forming ramparts, with all the regularity of immense walls, open to our view a landscape which wears an air of enchantment,

and which the transition of rocks, caverns, and recesses, continually keep alive.

Retracing our steps, and proceeding down the delightful walk on the Green Hill, we soon arrive at ARCHDUKE, or BREEZY SEAT. [*O.*] From this seat a most astonishing view bursts upon the visitor,—a scene of mining, manufacturing, and commercial industry, which perhaps, in the same area of ground, is unequalled in the kingdom. At our feet lies Tipton, veiled in smoke; at a further distance we discover, on the right, the manufacturing towns of Oldbury, West Bromwich, Smethwick, and Birmingham; on the extreme left is seen the mining district of Wolverhampton, Bilston, Darlaston, and Wednesbury; while the town of Walsall, and the lofty hill, Barr Beacon, embellish the distant prospect. In fact, we have presented to our view a complete bird's-eye view of the South Staffordshire iron and coal works.

These fiery regions are seen to the best advantage when the shades of evening have drawn a curtain over the earth. Huge furnaces are discovered vomiting forth fire and sulphur,—powerful steam engines hissing and disgorging their steamy vapours—putting in motion numerous pullies, ropes, and chains, whose clanging produces strange and unearthly sounds,—with hundreds of large fires, which reflect their lurid glare on clouds of smoke,—vegetation blasted,—houses tottering, and threatening to immerse the inhabitants beneath their ruins,—complete a picture which must be seen before the reader can form any idea of this mining and manufacturing district.

Leaving this spot and proceeding down the hill, on turning along a walk to the left, another seat invites our attention, called the CONTRAST. [*P.*]. This seat commands one of the most delightful scenes which it is possible to conceive. It is most truly a surprising and charming contrast to the last view. The wild and beautiful ravine before described is advantageously seen from a contrary point of sight, presenting a series of limestone rocks, with here and there immense perpendicular chasms. To attempt to describe the beautiful tints which adorn the large masses of rock would be impossible, the varying light and shade giving extraordinary beauty to the verdure which adorns their rocky protuberances.

The visitor dwells with delight on the singular alpine-looking glen, which is bounded and shut in partly by rocks, and partly by verdant sides, and agreeably varied by clumps of trees. Inquiry ascertains that its formation is the result of the workings of the upper lime quarries, which being exhausted, and the progress of vegetation encouraged, soon assumed the pleasing and enriched aspect they now present. The ancient towers of the citadel, which rear their heads at the farthest extremity of the glen, give an additional beauty to the scene.

This path leads us into the carriage drive, where, pursuing its course northward for a few paces, and then turning to the left, we find ourselves in another walk. If the visitor should have time or inclination, a digression might be made by entering a bye-path, used chiefly by the workmen at the adjacent limestone quarries, which leads into BELLE-VALE. [*Q.*] This wild

and romantic dell withdraws the mind from its many distractions, and leads it to indulge in solitude and meditation. Here, in the contemplation of nature—disgusted with worldly cares and worldly vanities—we may retire, and seek that calmness of mind—that holy reverence for the Creator which a view of his most beautiful works inspire; and where, in the language of the Psalmist, we may "commune with our hearts and be still."

From this part of the grounds we obtain a view of the ancient ruins of the Priory.

Retracing our steps, we find ourselves in the LOVER'S WALK. [*R.*] This meandering and sequestered path winds its way for about a mile among the most pleasing scenery imaginable. The numerous birds which locate in these thickets enliven the path with their songs, and add an additional charm to the scenes of enchantment through which the visitor has been straying.

> Hark, how they warble in that brambly bush,
> The gaudy goldfinch, and the speckly thrush;
> The linnet green, with others famed for skill,
> And blackbird fluting through his yellow bill;
> In sprightly concert how they all combine,
> Us prompting in the various songs to join.

Pursuing this sequestered and retired path, we at length arrive at the Town Lodge, after making a circuit of the grounds, and enjoying one of the most delightful walks it is possible to conceive.

If the noblemen and gentlemen whose estates are situated near to populous districts could thus be induced to open their parks, under certain restrictions,

to the public, it would confer a boon which would be of the greatest value to the community at large. The mansions of the opulent are well known to contain the most chaste and beautiful specimens of art; and hence, if reasonable access could be had to them at stated times, they would form the best schools for the study of classical design, and thus improve the taste of our artists.


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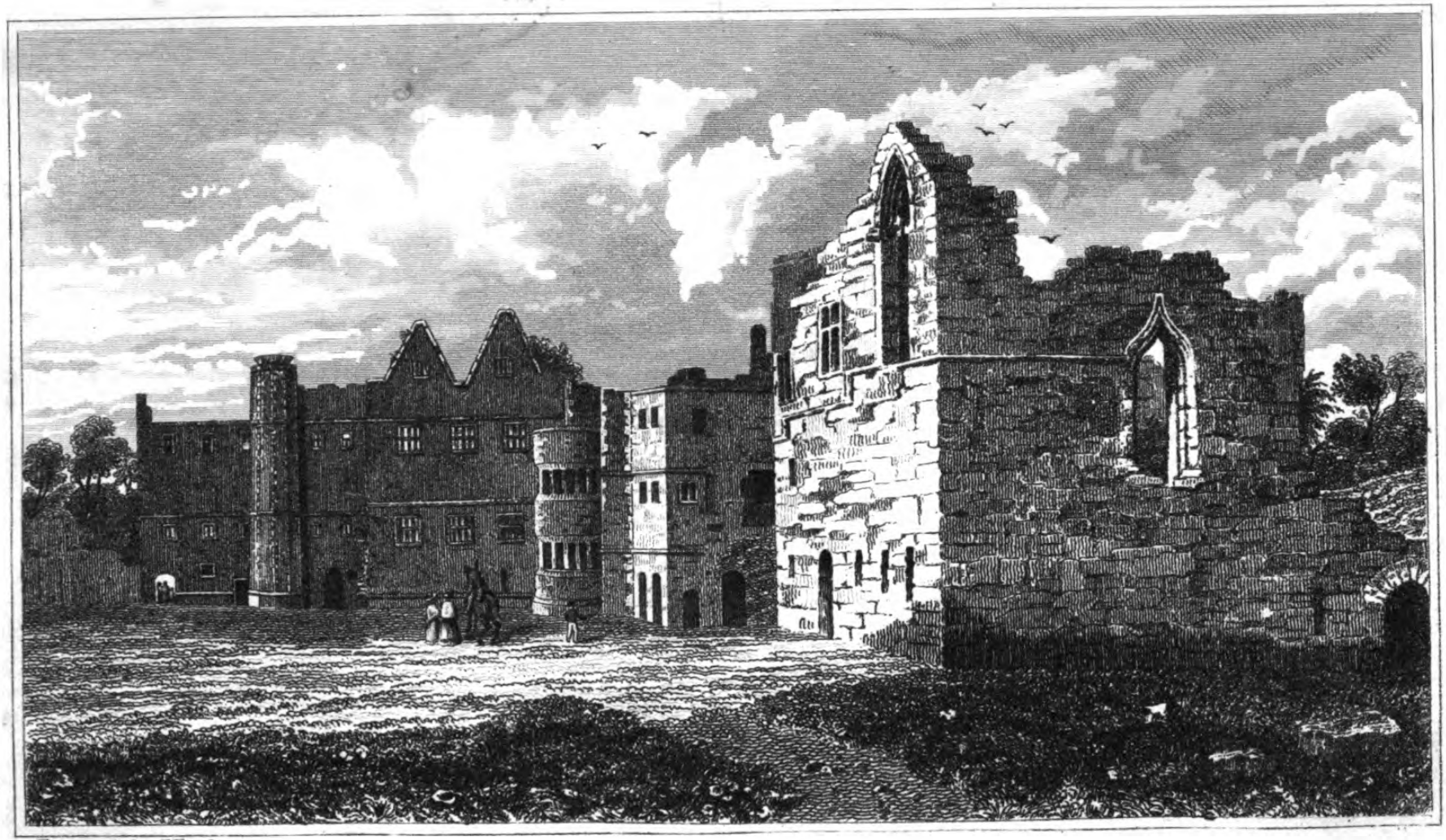

Engraved by J Fereday

DUDLEY CASTLE.

From the Inner Court.

CHAPTER III.

THE RUINS INTERESTING—DRAWBRIDGE—KEEPER'S LODGE—WATCH TOWER—SERVANTS' HALL—KITCHEN—PASSAGE—DINING ROOM—STATE BED ROOM—GRAND HALL—WINE VAULT—GRAND ENTRANCE—ANTI-ROOMS—BUTLER'S PANTRY—HOUSEKEEPER'S ROOMS—LADIES' CHAMBER—CHAPEL—VAULT OR CRYPT—TREBLE GATEWAY—FLANK TOWERS—STABLES—KEEP—GARRISON WELL—REFLECTIONS.

When we recline among the ruins of this noble relic of feudal strength, which from its great extent and majestic appearance claims the attention of every passing stranger, how powerful are the various reflections which arise in the mind! While surveying this striking memento of the mutability of human greatness, who is there that does not contrast its present silence and solitude with the time when, in its palmy days, the harp and the viol resounded within its walls,—when its merry guests were hospitably regaled, and mirth and hilarity prevailed! Its glory is now departed—

Ever and anon, there falls
Huge heaps of hoary moulder'd walls
Yet time has seen, that lifts the low,
And level lays the haughty brow;
Has seen this broken pile complete,
Big with the vanity of state—
But transient is the smile of fate.

As a guide for the visitor, we have prepared an accompanying ground-plan of the castle, showing the situation and use of its various buildings and appendages.

1. DRAWBRIDGE AND DOUBLE GATEWAY.

In olden times a deep entrenchment or moat completely surrounded this castle, which, when filled with water, was a great protection to it, for it was almost impossible to gain admittance without first obtaining permission to do so. Drawbridges, which could be raised or lowered at pleasure, formed the only communication with the interior.

2. KEEPER'S LODGE.

Adjoining the northern entrance is a ground floor apartment, nineteen feet seven inches by twelve feet two inches, where the keeper of the drawbridge and double gateway was constantly vigilant. In this room was a secret hiding-place, where a person whose life was in danger might remain concealed for a long time till the keeper of the drawbridge could see a suitable opportunity to aid his escape.

3. OCTAGON TOWER.

This tower was elevated high above the surrounding buildings, and commanded an extensive prospect of the distant country, especially in a direction towards the north and east. It was ascended by a spiral staircase, which is at the present time very plain to be distinguished; and, as a tower of observation, was no doubt of great service to the citadel.

4. SERVANT'S HALL.

In this room the servants and domestics used to regale themselves with brown loaves and flaggons of beer. It was thirty-one feet five inches by nineteen feet nine inches, having two outer doors and two windows :—

> Hark, from yon hall, as headlong waste prevails,
> What bacchanalian revels loud resound;
> With festive fires the midnight windows blaze,
> And fever'd tumult reels his giddy round.

Till within these last few years there might be found on an acute angle to the right of one of the entrances, about six feet from the ground, these unfinished lines ;—

> Water went ronde it to garde it from the Fooe—
> The Fire shall burn it—

When these words were carved no one knows; but it seems evident that they were executed by the incendiary, who was most probably interrupted in his work, or he no doubt would have finished his couplet by adding---

> ——————— and lay the towers low ;

but the foul deed is effected---the work is done.

5. KITCHEN.

A spacious gothic doorway leads into the kitchen, thirty-three feet three inches by thirty-one feet five inches. Its enormous fire-places, one of them measuring four yards and a half in width, together with its capacious ovens, give us some idea of the wholesale cookery once carried on there.

6. PASSAGE.

This passage, between the kitchen and the dining room, was eleven feet wide by thirty-eight feet six inches, at the end of which was a flight of stairs leading to a covered gallery and portico. The curious visitor may trace the way by which the servants approached the grand hall on high banqueting occasions.

7. THE DINING ROOM.

The dining room, thirty feet five inches by twenty feet ten inches, had a beautiful oriel or bow window. This must have been a room well suited for domestic comfort. There are still the recesses in the wall where the sideboards used to stand, just in the fashion of our present houses. Mrs. Sherwood remarks, that the oriel windows, the stone frames of which are so nearly entire, were, at the time of her grandmother's visit, "filled in part with painted glass, through which the lights which were within emitted rays of various tincture."

Over this room, of a corresponding shape and size, and having the same fashioned windows, was the

8. STATE BED ROOM.

This room, with the dining room under it, seem to be of more modern fashion than the other parts of the building, being evidently of the Elizabethan age. The wainscoting of the room was adorned with paintings, one of which is thus described by the grandmother of Mrs. Sherwood, in the account of her visit to the castle.

"It was a hard rude painting, the colours being much faded, but it represented a lady and a knight, with a numerous assemblage of sons and daughters of

all ages, from the babe on the mother's lap to the son just stepping forth upon the stage of busy life, and assuming all the airs of manhood; the towers of Dudley Castle arose in the distance, although their outlines could hardly be traced, for the painting was on boards, and empannelled in the wainscot. The lady was seated on a bank of flowers, and her husband was regarding her with such looks of love and confidence as the tender father often bestows on the mother of his children.--- The dresses seemed as if they had belonged to ages past, perhaps to the time of Elizabeth; but be that as it may, the picture represented a domestic scene, in which the beautiful and the brave, the noble and the delicate, had lived and moved, and felt and acted, years before even I had existence. And how many bitter and mournful scenes must have taken place before those domestic ties had all been broken, and every individual forming one in that faded group had been committed to the dust. I was particularly taken with this family picture, and would willingly have known the names of the persons deleniated therein, but the housemaid could not tell me."

9. THE GRAND HALL.

Of this splendid apartment, which was seventy-five feet eight inches in length and fifty-six feet eight inches in breadth, scarce a vestige now remains, except the vacant spaces where three lofty doors rested on their massive stays, and the stone frames of its transom windows looking towards the west.

In this room was placed, in olden time, an oak table

consisting of one entire plank, extending the length of the room, and three feet broad. The tree from which this table was made grew in the new park of Dudley, and is supposed by Dr. Plott to have contained one hundred tons of timber. This table was no doubt afterwards removed, to make way for more costly furniture.

We shall now describe the last grand ball scene which took place in this noble apartment, on the visit of the female before mentioned, who it will be recollected, was then in the capacity of lady's maid:—

"There were three great doors opening from the gallery above into the hall; at one of these all the servant maids were standing, and I took my place among them. I can hardly tell how to describe this hall to you, unless by saying that the roof was arched or groined, not unlike that of some ancient church which you may have seen; and it had large and lofty windows, pointed and carved in that fashion called gothic. It was illuminated with many candles, in sconces of brass, hanging from the ceiling, and every corner of it, wide as it was, was as bright as the day. There was a gallery at the farther end of it filled with musicians, and among these the first and foremost was an old harper from Wales, who used in those days to travel the country with his harp on his back, ever presenting himself at the door of that house where feasts and merry-makings might be expected. Such as he was are now seldom to be seen in Wales itself; how much less frequently, then, in this more remote country. But he led the band, sweeping the strings with high enthu-

siasm, and keeping up the spirit of those who accompanied him with the pipe, and tabor, and violin, whilst the flooring of the hall rocked beneath the quick and measured steps of the gay company who were engaged in the dance; for the assembly was large, and their hearts seemed to be devoted to mirth.

"I have still the figures of that gay and distinguished company, for it consisted of the noble of the land with their families; the ladies shone with glossy silks and jewels, and the gentlemen with embroidery and gold and silver lace. The dresses at that time were extremely splendid, and it may be fancy, or it may be not, but I do not think that I ever in these days see faces so fair, as some of those which shone that night in that old hall."

This grand hall was on a level with the chambers; and the basement space under it, where the rank nettle and the wild briar now revel amid broken fragments of fallen sculpture, was formerly occupied by offices for household purposes.

10. WINE VAULTS.

This triangular cellar-like place was probably used by the seneschal, or chief butler, for the reception of his wines and choice liquors.

Returning into the court-yard, by the passage (6) on the south side of the dining room, we perceive the traces of

11. THE GRAND ENTRANCE.

This consisted of a Doric colonnade or portico, which stood at the top of a flight of steps, behind which was

the grand hall or banqueting room before described. On each side of the steps on the basement were two recesses, where the sentinels took their stations. At each end of the portico were two

12. ANTI-ROOMS,

communicating with the great hall. Over this colonnade, the pillars of which were six feet five inches in height, were four eight-light transom windows, and under it was a dado, four feet three inches high, divided by the flight of steps. These steps are now no more, —neither are the feet which pressed them. Desolation has swept away the former, and the latter have long since been mingled with their original dust.

> The gorgeous castle, whose wide portals op'd
> On many a warrior brave, or damsel fair,
> Though but in ruins seen and faintly trac'd,
> Will, until man shall with his fellow-man
> Refrain to sympathise, charm ever.

13. BUTLER'S PANTRY.

This room, fourteen feet six inches by fourteen feet three inches, was for the use of the butler, where he no doubt kept the plate, &c.

14. HOUSEKEEPER'S ROOMS.

Passing a little to the right under a low arched doorway, the rude outlines of three or four apartments may be faintly traced. This suit of rooms, which also extended under the great hall, was occupied by the housekeeper, and used for domestic purposes. The last antiquated personage who occupied it in that ca-

pacity is thus described by the individual before mentioned:—

"Such a figure as was that housekeeper could not be met with in these days, unless it might be on some old tapestried wall; what bustle was she in, with her huge bunch of keys hanging to her girdle by a strong chain of steel.—There were refreshments laid out in every corner of the room, and when I had taken some I was turned over to a housemaid, who looked as old and as antiquated as the housekeeper herself, and by her I was led to the chamber which my ladies were to occupy."

LADIES' CHAMBER.

"All vestiges of that chamber, and of the narrow passage and staircase which led to it, are quite passed away; but I remember the place as well as if I had visited it yesterday. It was a wide low room, and there was a light closet in it, and it was hung with a tarnished paper, which looked like cut velvet; and there were huge stout backed chairs, and a large toilet set with Indian dressing boxes.

"I wish, however, (says the before mentioned female,) that I could bring before you, as it were in pictures, the curious old fashioned ornaments and pieces of furniture which I saw in the castle. There was not a window which was sashed, but all were casement, in stone frames, many of the panes being of coloured glass. And there was scarce one chamber on the same parallel with another, but there was a step to go up or a step to go down to each of these; then the chimney-pieces, being mostly of carved wood or stone, were so

high that I could hardly reach to the mantel shelves when standing on tiptoe; and instead of grates such as we have now, there were mostly dogs upon the hearth. Then the chairs were of such a size, that two of the present sort would stand in the room of one; and the doors, though very thick and substantial, were each an inch or two from the floor, so that the wind whistled all along the passages, rattling and shaking the casements, and often making a sort of wild and mournful melody."

15. THE CHAPEL.

This broad mass of building, which was raised on a strongly arched sub-story, is a well proportioned apartment, fifty feet by twenty-two feet, in the erection of which considerable attention was evidently paid to architectural adornment. Of the eastern window not a portion remains, but being over the altar, it was doubtless most superb, both as respects size and structure. The framing of the western window is entire, and presents a specimen of the style of architecture called florid gothic. Its dimensions are fourteen feet by seven feet. Another window of an elegant lancet form, with reverted curves, eight feet by four feet four inches, adorns the southern wall, nearly at the west end. Probably a corresponding one graced the south-east end, and a larger one, more ornamental, rose between them.

> But all is still—the chequer'd floor
> Shall echo to the step no more;
> Nor airy roof the strain prolong
> Of vesper chaunt or choral song.


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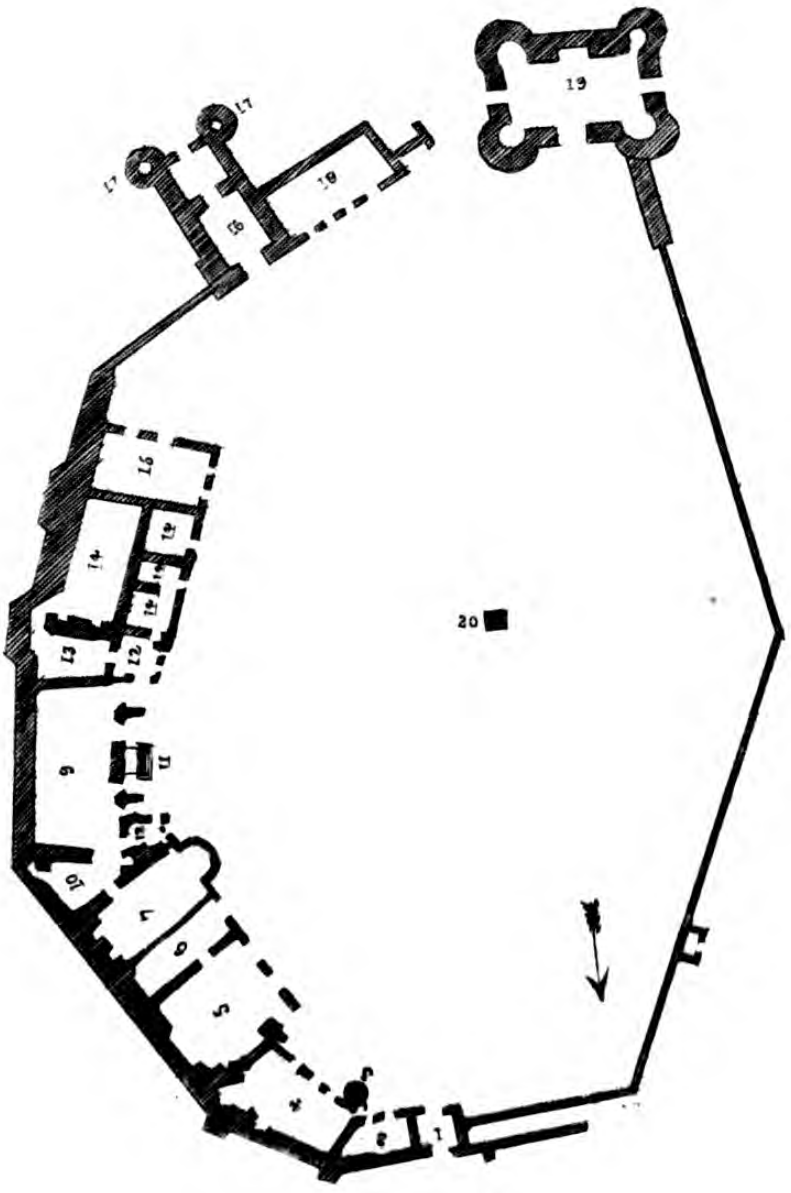


GROUND PLAN OF THE CASTLE.

The family passage to the chapel was evidently on the same level with the great hall and chief apartments.

VAULT OR CRYPT.

Under the chapel is a wide vault, which is usually called the dungeon, forty-five feet ten inches by twenty-two feet two inches. Some have thought it to have been a cemetry or family vault, while others have supposed it to have been used as a dormitory for soldiers. There is, however, little doubt but it was the great magazine of the castle, where was stored that good cheer so requisite in an establishment of such magnitude.

16. TREBLE GATEWAY.

This strong and formidable gateway formed the grand entrance into the court of the castle. Its capacious Saxon archway was surrounded by a double window of the same style of architecture. In the opening of the wall, to the left of the arch, was a flight of steps leading to a spacious magazine, over the gateway, for materials of dreadful annoyance to an assailing foe. A portcullis, or drop-gate, was fixed at each end of this gateway, the grooves in the stone work admitting them being still visible. Through a square gullet in the centre of its roof was poured down, from the magazine above, a fiery torrent of melted lead, or other materials of destruction, on those, who, having passed the two strong gates in front, and the space sixteen feet square between them, had proceeded thus far towards the area.

17. FLANK TOWERS.

These turrets which, giant-like, guarded the outer entrance of the treble gateway, were each of them ten feet four inches in diameter, having a spiral staircase communicating with the armoury or magazine above, and descending to a vault below, which is now closed up with materials of the ruinous towers.

Supposing the outer van gate, which was probably attacked by battering rams, had failed to prove a resistless barrier—and to force that, as Dr. Booker justly remarks, must have been no easy task; for, pierced by spears and arrows through the cruciform lance-holes in the two flanking turrets which guarded the entrance, and assailed by other missiles from higher parts of these turrets, we may form some idea of the carnage which would then take place. But when the deadly portcullis fell and enclosed in the vestibule those who had dared to force the outer gate, and the murderous sluice in the vault above them was opened, and a fiery torrent descended upon their heads, slaughter must have become wearied of its most horrid work ere any impression could have been effected, the use of artillery being then unknown.

The walls of this important part of the fortress were of the thickness of nine feet, thus giving us an idea of its immense strength. It was skilfully constructed for defence, and well adapted to military purposes.

> Nettles and vilest weeds that grow,
> To mock poor grandeur's head laid low,
> Creep round the turrets valour rais'd,
> And flaunt where youth and beauty gazed.

18. THE STABLES.

Adjoining to the treble gateway is a range of buildings formerly used for stabling. The ancient barons delighted in a richly caparisoned steed—hence the large and commodious stables appointed to their use.

19. THE KEEP.

The keep of this noble fortress frowns majestically over the town of Dudley, and commands extensive and diversified views of hill and dale, comprising even a distant prospect of the mountainous district of Cambria. After surveying the ponderous mass in its ample dimensions,—rising like a giant in the air,—the spectator will proceed to scrutinize its parts. Its spacious curtain, pierced with slant loop-holes—its repulsive entrance, under a portcullis, between Saxon parallel arches and ribs of durable red stone—will excite particular attention.

Passing under the low central doorway, and entering the interior of the keep, its plan is at once perceived. It consisted of four towers, connected by curtain walls, as they are technically called. Each of these towers was twenty-three feet in diameter to the exterior surface, and the circular walls were five feet and a half, leaving an area of twelve feet in diameter within each tower, the whole, with the curtain walls, enclosing a space forty-nine feet eleven inches by twenty-seven feet five inches. This spot was the fastness or stronghold in moments of desperate warfare.

The architecture of the keep is of the simplest character. The rooms in the towers must have been gloomy

and dark, the solid wall being only pierced by occasional chinks, more calculated to serve as points from whence an assaulting enemy might be annoyed, than as windows to admit the cheerful light of day.

The two outer towers, and three of the connecting walls, were destroyed to within a few feet of their foundations by republican cannon, in 1664, and the upper faces of their remaining masonry being levelled, form an esplanade which commands a fine and interesting prospect of the town of Dudley and the adjacent country.

> By the grim storm-clouds o'ercast,
> Even like a spectre of the past—
> Of rapine, feudal strife, and blood —
> Thou tellest an old, wild, warlike story,
> When squadrons on thy ramparts stood,
> With spear and shield, in martial glory.

20. THE GARRISON WELL.

This well, which supplied the inmates of the castle with water, is situate in the middle of the court-yard. It is, like the door which covers it, square, a form peculiar to similar wells of great antiquity. The depth is 108 feet, and it is six feet and a half across it.—What is very remarkable, notwithstanding the great height of the castle, and the surrounding ground being undermined in almost every direction, it always stands full of water to within a few feet of the brim, so that the adjacent moat may at any time be replenished with it. It appears to have been lost sight of, even by tradition, till 1804, when a horse grazing there broke by his weight some of the decayed timbers which then

supported a thick covering of turf, and narrowly escaped a disastrous death.—The well is now covered by a strong iron door, fastened with a padlock, the key of which is kept at the cottage near the warder's tower.

The architecture of this castle, as we have shown, is of a mixed style. The materials with which its massive walls are constructed, are, for the angles, copings, and ornamental parts, hewn stone from the quarries at Gornal, distant about three miles, filled up with the rough limestone of the immediate hill, in small irregular pieces, cemented so strongly as to be nearly imperishable by weather, and almost indestructible by time.

We cannot wander amid the ruined walls of this once noble fortress without feeling ourselves on sacred ground,—

> The stones have voices, and the walls do live,
> It is the house of memory,—

and is hallowed by the touch of genius, consecrated by those vivid historical recollections and associations, which, to the eye of fancy, peoples the desolation around us with the shadowy crowds of long-passed ages, and fills the lonely ruin with imaginary life.

> Sing the days of olden time,
> String the olden harp anew;
> Weave the spell of golden rhyme
> O'er the heart and fancy too.
>
> Tell of banner'd hall and hearth,
> Chivalry and beauty's train
> Sleeping in forgotten earth—
> Sing their loves and lives again.

Where the weed of ruin springs,
  Trod the gay and courtly throng;
Where the bird of darkness wings,
  Sang the gifted sons of song

O'er the chequer'd pavement, spread
  With broken fragments all around,
Festive feet were wont to tread
  Lightly, to the harper's sound.

Oh! how everything one sees
  Tells of beings now no more;
Hark!—'tis nothing but the breeze
  Sighing through some corridor.

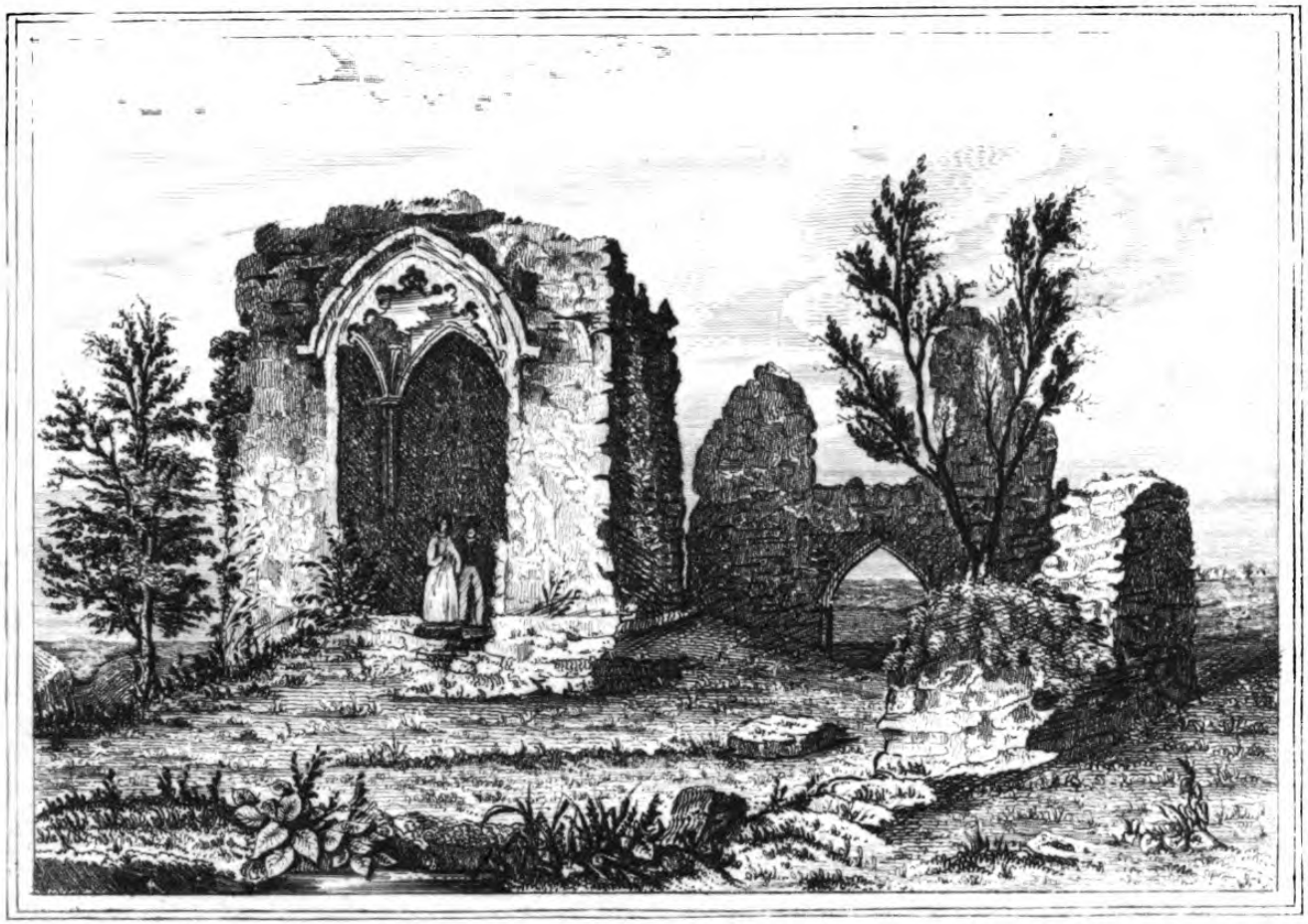
See the little chapel, now
  Stript of all its holy things;
Living knees no longer bow—
  Choral voice no longer sings

Farewell, halls of olden time—
  Bannered tomb and trophied urn,—
As the mouldering steps I climb,
  Oft a wistful eye I turn.

There will come a time, when all
  The gay abodes of man will be
Dark, as this neglected hall
  That echoes my rude minstrelsy.

Oh! it is a mournful thing
  To meditate on what *must be*;—
To think how Time's enduring wing
  Is laden for futurity:

And oh! to see, as in a glass,
  The countless millions of the dead—
With none to answer us, alas!
  The question—*whither are they fled?*



THE PRIORY DUDLEY.

CHAPTER IV.

PRIORY—FOUNDATION CHARTER — POSSESSIONS — BURIAL PLACE OF THE LORDS OF THE CASTLE— DECAY—RUINS—ANCIENT FISH PONDS.

At a small distance west of Dudley Castle, stands the Priory, founded by Gervase Pagnell, one of the lords of this manor (A.D. 1161), in the reign of Henry the Second. It was built on the site of a former sacred edifice, which had been dedicated to St. James, and was filled with Cluniac monks, from the abbey of Wenlock, in Shropshire. Their religious habit was a black loose gown and cowl.

The foundation charter of the convent, a copy of which may be found in Dugdale's "Monasticon," is so curious, that we cannot forbear laying before our readers an old translation of the same:—

"Know all men present and to come, that I Gervas Paniell, considering the purpose of Ralph Paniell my father, who intended in his life-time to found a convent of religious persons at Dudley, especially for his soule and other my anncestors, and for my own soule, and the soule of Isabele my wife, and of Robert my son, and of all mine; to fulfil my father's purpose: Therefore I give and grant, and by this charter do confirme in perpetuale claims to God and St. James of

Dudley, and to St. Milburge, of Wenlocke, and to the monks serving God at Dudley, all the lands in which the aforesaid church of St. James is situated and limited by certaine bounds. I give also to the said monks of Dudley, the church of St. Edmund and of St. Thomas, of Dudley, and the church of Norfield, and the church of Sedgley, and the church of Iggprime, with all their appurtaining liberties. Moreover, I give and grant to them the church of Bradfield, after the decease of John the parson, with all its appurtenances. I also give to them the half hyde in Church-hull, and the other part of the towne, which St. Agnis gave to the said church of St. James, of Dudley, with her body. I have granted to be given, with its appurtenances, all which is of my ffee; and if there be any of my tenants, be he knight, or what condition soever, that will grant anything of his own right to the monks of St. James, I do ratify it, be it never so much, so that nether I nor my heirs may lose the services that belong to us for the same. And in what pastures soever my own cattle shall feed, there shall the cattle of the monks of Dudley feed without contradiction, excepting in my park. I do also grant unto them pausterage for their own hoggs, and the hoggs of their tenants, throughout my fforest, residing within my limits; I also give to them the tithe of my bread, venison, and fish, so long as I shall reside at Dudley or in Arden; I also for their own building, and other their easements, all necessaries by the oversight of my seaer, unless in my haies and parkes. The liberties also which I can give, I freely give unto them, with sock and tole, and tack

and tem: nevertheless the prior of Wenlock shall have power to place in the monastry of St. James, of Dudley, in the presence of the monks, there to serve God, such brethren as he will, and are at his disposal; and he shall constitute over them a prior out of his own monks, by their consent, and assent of me and my heirs; and if he ought to be removed, it shall be with the consent of me and my heirs, and the prior of Wenlock. And when the aforesaid house of Dudley can support a convent, the prior of Wenlock, with the consent of me or my heirs, shall constitute a convent.

"This grant I have made, constituted, and confirmed, and my own hand have offered upon the alter of St. Milburge, of Wenlock, and in the presence of the convent, and likewise upon the alter of St. James, at Dudley, in the presence of the monks of that place, these being witness: Isabelle the countess my wife, and Robert Paniell my son; William the son of Giwy, and William the son of Peter; Adam the priest of Aston, Allen the sewer, Roger of Hagley, Hugh the clerk of Bridge, Ralph of Somery, Richard the son of William, the son of Guy; Walter the son of Thomas Osbert, of Rushall. and many others; Warner of Wilybee, Roger the sewer, Hammond of Reeve, Roger Wilcome, Roger Friend, Walter Pleasant, Robert de Chalmes, Roger Barret, and Thomas Coocke."

In 1190 Pope Lucius confirmed the monks in their privileges and possessions. Among these were "the church of St. James, and the chapels of St. Edmund and St. Thomas, of Dudley; the church of Segesle, with

its appurtenances; the church of Northfield, with the chapel of Cofton; the church of Ingle, with its appurtenances; the church of Bratefielde, with the chapel of Englefield, all of the gift of Gervase Pagnall; the church of Womborne, with the chapel of Tresel, and other dependencies, the gift of Guido de Offeni; the church of Seille, in Leicestershire, with its appendages, the gift of Ralph de Seille; the town of Churchill, with its dependencies, the gift of Agnes de Someri; the town of Saredun, with its appendices, the gift of Osbert de Kenefara; one rood of land in the town of Wolintone, the gift of Robert de Chandeu; and the lands of Igepenne, the benefaction of John Mansell."

The noble barons of the castle had sepulture within the walls of the convent. Here, with his ancestors, was interred the spirited Roger de Someri, with all the funereal solemnities attendant on the Catholic religion.

> The train
> Moves onward to the Priory's western porch,
> Whose windows and retiring aisles reflect
> The long funereal lights.—Twelve stoled monks,
> Each with a torch, and pacing two and two
> Along the pillar'd nave, with crucifix
> Aloft, begin the supplicating chaunt,
> Intoning "Misereri Domine."

Roger, bishop of Coventry, granted forty days' indulgence of an enjoined penance, to all such as being truly contrite, and having confessed and communicated, should say in the conventual church of Dudley, where Roger de Someri was buried, one Pater-noster

and one Ave for the soul of the said Roger de Someri, and all the faithful departed. Pope Boniface the Eighth, in the year 1300, by his bull, granted the like indulgence, the diocesan concurring therein.

Eardeswicke, the historian, thus describes the state of the Priory in his time:—

"Dudley Castle stands within the manor of Sedgley, in the very confines of Staffordshire, and so near Worcestershire, that the town of Dudley (whereof the castle is called) standing within a stone's cast of the castle, is in Worcestershire, and so I take it is the Priory also, which Priory was at first founded, as I think, by Willielmus filius Ansculfi, or his son.

"In the church of the same Priory were divers goodly monuments of the Somerys and Suttons, and especially one being cross-legged, and a very old one; which, as it was a very goodly one for the workmanship, so it was much more strange for the stature of the person buried; for the picture which was laid over him I took the measure of, and found it to be full eight feet long; neither was the person lesser of stature, for the coffin wherein the charnal was laid, being of freestone, and hewed hollow, answerable to the proportion of a man: the hollow was also eight feet, so that the body could be no less; for if it had, it could not with conveniency have been layed in it. Writing I could see none, nor any other matter whereby I might discern whose it was, until seeking something narrowly, I found, under the arch of the monument, the gold fresh, wherewith no doubt it had been wholly gilt over, and in the gold an hinder leg and a piece of

a tayle of a blew lion, which also a man might discover to be passant, and that by the space of place it was contained in there must necessarily be two lions, otherwise the leg and tayle must proportionably have been much bigger and larger than they were, and otherwise placed; so that thereby you may perceive it was a Somery, and, as I take it, the first founder of this Priory. Divers other monuments there were, one other also cross-legged, but much slenderer than this other was, and also shorter. Another newer, which I take to be for some of the Suttons, since they were lords of Dudley; but great pity it was, methought, to see both the church and the monuments so defaced as they were; and so I told my lord; and that I marvell'd that either he or his ancestors would suffer it; and he answered me that it was done while the duke was owner of it, so that the fault was neither in his ancestors nor him.

"Into one of the churches is removed, out of the Priory, a goodly monument of one of the Suttons, Lord Dudley; which I take to be for him that was first created Lord Dudley of that house, in Henry the Sixth's time, for that the picture lieth in the order of the Garter, and so was the first Sutton which was created Lord Dudley."

Time and avarice have destroyed the very ruins of these monuments, a part of one of the coffins having been applied to the ignoble purpose of making an arch to a drain. This was exhumed some time ago, and now lies near the walls of the ruin.

After the dissolution of the monasteries, the Priory suffered great decay. Several of the offices were

STONE COFFIN LID AT DUDLEY PRIORY.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patched up into dwellings; and in 1794 a steam mill was erected upon a part of the ruins, in sinking the foundation for which a great number of human bones were dug up; and, among several others, a skeleton was found almost entire, of an uncommon size. Thus defaced, and intermixed with brickwork, forming a pile of rambling and irregular dwelling houses and shopping, it remained till a few years ago; a handsome gothic mansion (called also the Priory) was erected near this spot, for the agent of his lordship. The intrusive and decayed tenements were now cleared away from the ruins, great care being taken to preserve all that remained of the ancient edifice, and which are rendered more picturesque by being overgrown with ivy.

From the walls which are still standing, it is impossible for the visitor to judge of its former size and architectural decorations; but, on referring to an engraving in Nash's Worcestershire, of the ruins as they existed about sixty years ago, the building appears to have been of an ornamental character.

The beautiful gothic window on the east side of the edifice is worthy of attention. It appears to have been richly decorated, and has a niche and canopy for an image on one side of it.

Formerly this convent was surrounded with large pools of water. One of them, called the Castle Pool, consisted of many acres. This must have been a fine expanse of water, and was well stored with fish, particularly pike, which have been taken upwards of twenty pounds in weight. It was also the resort of

abundance of birds of the aquatic tribe;—but the diversion of the angler and the sportsman are there at an end, for what was once water is now dry land, and cattle are seen feeding where inhabitants of another element took their pastime.

> Lo, desolate the seat of ancient piety!
> The mould'ring walls, the unjointed stones, confess
> The iron tooth of Time;—the half-sunk arch,
> The weight of 'whelming years.
> Reflected from the pure sky-tinctur'd wave,
> A sacred solitary scene it form'd.

A finely carved stone coffin, representing a monk in the attitude of prayer, which was exhumed a few years ago, is reared against one of the walls of the convent, and forms a picturesque object. Our accompanying sketch may serve to give our readers an idea of the same.

To the ruins, as a whole, the following beautiful stanza of Lord Byron may be justly applied:—

> A mournful remnant of a gothic pile,
> Kindling sad feelings in the roughest heart!
> Its lofty arch, that once screen'd many an aisle,
> Long since has disappear'd—a loss to art:
> A spacious window, hollow in the centre,
> Shorn of its glass of thousand colourings,
> Through which the deepen'd glories once could enter,
> Streaming from off the sun, like seraph's wings,
> Now yawns all desolate! Now loud,—now fainter,
> The gale sweeps through its fretwork; and, oft sings
> The storm his anthem, where the silenc'd quire
> Lie, with their hallelujahs quench'd like fire.


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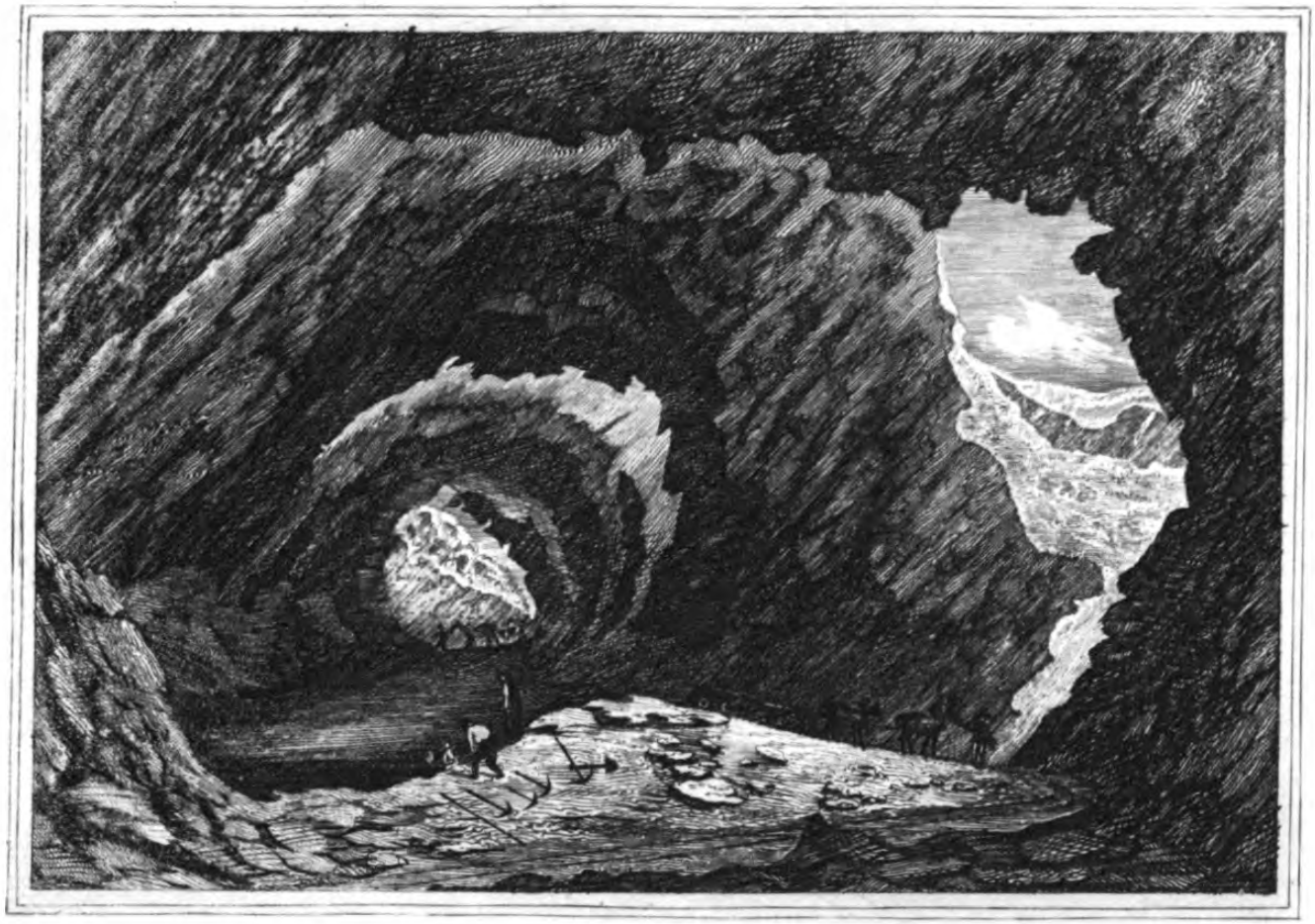

LIGHT CAVERN WREN'S NEST HILL.

CHAPTER V.

LIMESTONE CAVERNS—METHOD OF WORKING—RAILWAY UNDER GROUND—BASON—OLD SIDEWORKS—SUBTERRANEAN CANAL—GREAT CAVERN—WREN'S NEST.

Underneath the hill, which the ruins of the castle so finely embellish, as also under the adjacent one called the Wren's Nest, there are stupendous caverns. These excavations, which have been formed by the removal of the limestone, are truly grand. The enormous subterranean works, with the method of procuring the stone, are highly deserving the attention of visitors, who have here an opportunity of seeing this useful article forced from the bowels of the earth, and conveyed through the country by means of inland navigation, to serve the purposes of the agriculturist, the architect, or the manufacturer.

In describing these subterranean wonders, we find that we cannot do justice to the subject better than by laying before our readers the excellent observations of Mr. Bentley, as given in his "Directory of Worcestershire," the more especially as that gentleman has so carefully noted the manipulations connected with limestone mining, that there appears to be nothing of interest to the visitor that he has not taken cognizance of.

"Descending a fine and very gentle slope on a nice carriage road, for about two hundred yards, when the road turns much to the north, we find the entrance-lodge from the Birmingham road on our right, and a ravine on our left; along the east side of this ravine, the road continues, and we shortly reach the mouth of a tunnel, up which a railway passes. This tunnel, and the lime works to which it leads, are dry and perfectly safe, and may be visited by the most timid of the weaker sex. This cavern is marked A, on our plan of the castle grounds.

"This tunnel is about eighty yards long, and six feet high; the light of day is sufficiently strong to enable us to see our way indistinctly, and on reaching the mine, we immediately perceive the lights by which the men work in this dark cavern; on calling, some one of them will kindly attend with a light, and show the visitor any part of the works, or of the mining operations. The strata of limestone here is about thirty feet thick, and the mine now under examination is about sixty feet wide; but the terms wide and high are very inaptly applied to it, as the bed is inclined at an angle of about seventy degrees to the horizon; what would be called the bottom of the mine being so steep that it cannot be climbed without other support than the force of gravity. A railway extends at right angles from the tunnel both to the right and left extremity of the mine, and the workmen are seen perched up aloft, or flitting about with dim tapers stuck in bits of clay for candlesticks. The limestone lies very firmly embedded in large stratified masses, and is blown

to pieces by gunpowder, being too ponderous and firm to yield much to the lever and wedge; the powder is introduced into the rock by first drilling a hole from one to two inches in diameter, and from twelve to twenty inches deep; this is an operation requiring great labour, and most of the men you see at work are engaged in drilling these holes, which they do with a long iron rod, by continually lifting it up, and letting it fall with its own weight, aided by the workman's strength, always falling in the same place. By this constant labour the hole is made in the rock, the powder is then introduced, firmly rammed and stopped at the top, a space is left for inserting a straw, filled with fine powder, to which a match is placed, with the burning part of the match a little above the straw; the miner then retires, and warns his fellew-workmen to retire to a sufficient distance; the match gradually burns lower and lower, till the fire descends to the straw, when the powder it ignited, a most awfully grand explosion reverberates through the widely vaulted cavern, the rock is burst asunder, and the fragments fly in all directions.

"It would have been well for mankind if this chemical compound had never been used but in such useful operations. We see the miners immediately set to work in filling the low waggons on the railway with rock thus blown loose and scattered about; and thus are these men continually employed, in procuring cement to build our houses, manure to fertalize our fields, or flux to aid in smelting iron ore, so that we may obtain this most useful and valuable metal for the thou-

sands of purposes to which we apply it to for our use, comfort, and ornament.

"The men employed in the mines are very kind and civil, and readily give every information in their power; and of course, as they labour hard for their daily bread, no one could think to occupy their time, in giving to the enquiring mind most valuable information, without making them a trifling return.

"The mine is at present about seventy yards long, in each direction from the mouth of the tunnel; and the rate at which it advances is about three feet per month at each end. The workmen blast twenty or thirty times a day, so no one need wait any great length of time to hear the awful sound produced by this useful operation.

"Returning again to open day, and regaining the bank on which the road runs, we observe a pit opposite the mouth of the tunnel, and near to the race ground. This pit is thirty-four yards deep, though the miners are working a bed of limestone that lies over the bed we have just left, notwithstanding their being so much below the surface. Thus, as the strata or measure of any mineral dips lower and lower, so man is obliged to go to greater labour and expense in extracting it from the bowels of the earth. From the mouth of this pit a railway passes between the castle grounds and the race course, along which railway the limestone is conveyed to the canal near Tipton, and is thence taken in boats or carts to the various places where this useful material is required. This railway thus serves for both the pit and the works in the tunnel.

"Leaving this place, we pass along the road about two hundred yards, and come to the north end of the deep ravine on our left, and by stepping down a steep narrow path which leads to the bottom of the ravine, a fearfully yawning gulph is disclosed to the astonished view. After recovering a little from our surprise, and gaining sufficient courage to examine the opening, a very steep but slippery path is observed, leading down into the abyss below, on the right hand or southern side of the huge mis-shapen pillar in the middle of the cavern's mouth.

"Cautiously descending, we find on a nearer view of the cavern that it has a bottom, that on that bottom is a railway, and that this is such another place as the one we have just left, except being lower in the earth, and being in a thinner measure of limestone. The thickness is here eighteen feet, the width of the mine forty-eight feet, and the dip or inclination about fifty degrees;—the method of working is the same as in the first mine. The railway extends the length of the cavern, which is at present about one hundred and fifty feet; and at the north end the railway turns short to the west, right under the hill to a canal. The limestone obtained from this measure is preferred by iron masters, as a flux for their furnaces, to the produce of the thicker mine, which lies considerably under this.—This cavern is marked B, on our plan of the grounds.

"Having less to learn in this place than in the last, we may make a shorter stay; and returning again to the carriage road, we pursue our way for three or four hundred yards, having an high, very irregular, but well

wooded bank on our left, and on our right an old limestone quarry. Down among the brushwood, about the before-mentioned distance from the last cavern, is a small ivy-covered cot, and in the bank are several steps leading down to the cot: on descending these steps a sort of trap door is observed on our right, and a long flight of stone steps leading down a narrow passage as far as the eye can discern objects. This has been long used by the miners as a short and easy way of going to and returning from their work in some of the mines, and this cot was built by a late Lord Ward for them to eat their dinners above ground. This cavern is marked C, on the plan.

"Again stepping up the road, we continue our walk amid objects and scenes similar to those before alluded to, till we arrive at the farm, and then at the entrance lodge from Tipton. A short distance outside the gate is the canal, by which much of the limestone extracted from the mines we have seen, and those we have still to see, is conveyed at a cheap rate to all parts where it is wanted; and here is a steam engine at work, and several pits, from which this engine draws great quantities of limestone.

"Not far from the lodge is the castle mill, now a genteel residence, and below it the castle mill pool, a place so called where the canal is seen emerging under ground, and passing again eastward under a short tunnel to the Tipton wharfs. A few steps north of the mill pool, along an artificial dell, is a small cavern half full of very clear water; this cavern has a small echo, but nothing else remarkable.

"Returning again through the lodge gate to the castle grounds, turning short to the right, and passing a few steps up a gentle ascent between two banks, we come to three roads very much alike in appearance, but leading off different ways. By taking the road to the right we perceive a stone wall, and looking over this we perceive a deep basin, called the New Basin, lying at our feet to the north, and boats laden with limestone lying on it, or being propelled by some unseen agency from under ground into the gloomy Stygian pool."

"Deeply sunken (as Dr. Booker observes) amid rocks and caves, the sunbeam seldom warms its sullen waters; and the pallid beings who are occasionally seen propelling boats into the apertures of invisible passages, clad in their barracan mine dresses, cameleon-like, appear to derive their hue from the rocks which surround them. These rocks, reflected on the surface of the aqueous mirror, afford a vast imaginary depth to the pool. Rising perpendicularly, their rugged fantastic shapes, apparently visible through a supposed pellucid medium, seem by inversion to lead the eye to their very base."

The visitor will find, says Mr. Bentley, "an immense yawning cavern at the south-east corner, from which great quantities of limestone have been obtained; but the mine is now disused, and is not much visited. It is called the Old Side Works, and extends about one hundred and eighty feet; from the interior, looking outward, a fine view of the stratification of the limestone rock is obtained. The interior is very dark on

first being entered, but the eye soon begins to discern objects, and the light is so strongly reflected by the limestone lying and hanging on every side, that in five minutes any person may be able to perceive objects around the interior, though indistinctly. This cavern is marked D, on our plan.

"On the north side of the basin is a limestone cave; at the north-west corner the canal branches off under ground to extensive limestone works at Wren's Nest Hill; on the west side the canal passes under ground for a mile and three quarters, going on to Stourbridge and the Severn; and there are two branches leading from it to the limestone caverns under the castle hill. At the north-east corner the canal passes on through two small tunnels to Tipton, and other places in Staffordshire and Warwickshire. Care is necessary in ascending from, as well as descending to this basin, as the very least penalty for one false step would be a cold water bath, and might be instant death.

"The road again regained at the point we before left it, we pursue our way westward, and in a few paces observe on our left a deep precipitous ravine; the most remarkable feature about it that strikes us, is the recumbent posture of its stratified sides, for they are nearly as much inclined to the west as all the other strata, during our tour thus far, have been inclined to the east. A little further along the road, in the same direction, a sinuous rough path is observed, leading down to a deep ravine and gloomy cavern. Pursuing this path a short distance, we pass a small opening in the cliff on our right, protected by a wall; and on

looking over the wall, the canal is seen which passes through the hill, under a part of the town of Dudley, and emerges again to open day, near the Park Head Furnaces. This cavern is marked E, on the annexed plan of the grounds.

"On attaining the cavern's mouth, right before us, we again find a canal issuing from a tunnel on our left, (so that we are now between two canals,) passing right up the cavern. On inspecting the wide abyss before us, we easily perceive that it is made in the thinner measure of limestone, and also remark that it is inclined or dips to the west. This cavern is of considerable length, is crossed by a frail wooden bridge a short distance from the mouth; but, in consequence of the narrowness and insecurity of both the bridge and the path beyond the bridge on the east side, it would be improper and dangerous for any stranger to attempt to explore the cavern without a light and a guide;—these can be easily procured if desirable, though the method of working here, and all the operations of the miner, are about the same as on the east side of the hill.

"Retracing our steps down the cavern, up the ravine, and along the road by which we came from the new basin, till we again reach the point where the three roads branch off, we take the road on the right hand, leaving the middle road of the three unexamined, as there are no caverns in that direction. Pursuing this road, or rather path, in the bottom of a deep dell, for about one hundred yards, our way becoming more and more gloomy every step, we see a sudden opening

on our right, a cavern at the bottom of that opening, and steps leading down to the cavern from our path. This cavern appears almost blocked up by rock and brickwork till we descend into the mouth; but we find there is a passage both to the right and to the left. The former is impassible—the latter indescribable. A guide to examine its peculiarities, its beauties, its awe-inspiring wonders, may be attempted; but the efforts of the greatest artist would be thrown away, if he attempted to convey to others even a faint idea of the place we are now approaching, without its actually being seen.

"Looking in at the opening in the brick wall, we perceive a canal below, and turning to the left, a path, trod before by millions of devotees at the shrine of nature and art, leads down to a wide area; and when we have passed down this curved path, between the enormous pillar of rude limestone rock (left to support the ceiling which covers this part of the profound area) and the side of the stupendous cavern, what a scene presents itself! Whether we speak of its vastness, its form, or the solemn awe it inspires, we find an utter impossibility in likening this to any other place. In this temple Professor Buckland lectured to the members and friends of the British Association, on their visit here on the 30th August, 1839.

"The cavern is formed in the ten-yard measure of limestone, and if the strata was level, and the space had not been partly filled up, the height of the ceiling would of course be thirty feet; but as the inclination is so great, the ceiling, from being low on the west or

right hand side, rises rapidly to an height that makes the head giddy to look up at it. The limestone has not been merely taken from a space sixty feet wide, as in the first tunnel we inspected; but huge pillars have been left as large as a house, two or three rows deep, which pillars effectually support the hill above, and make the vast space we are now viewing with astonishment as safe as any theatre. But—how it thunders! —the fine, calm, lovely day we left outside, cannot be so changed. Where are we? How awfully that last peal reverberates in our ears! Really, whatever can all this mean? What are those lights—those grim and ghastly figures holding them—that water—a boat actually coming this way? The very picture—no, the reality itself—we are undone! undone!

"This scene is so true to the original, and corresponds so exactly with that described by Virgil, that the stoutest nerves are often shook by it, if not aware of any of the facts we are now seeking to ascertain. To any one not having seen the other caverns, and entirely unacquainted with the mining operations going on here, and entering the wonderful gloomy area we are now contemplating at the moment two or three blasts explode, about twenty or thirty seconds after one another, at the further extremity of the mine, which is not an unfrequent occurrence, and especially if a boat of limestone be at the same time coming along the canal (and many do come daily), such persons ought not to be called timid or superstitious if thoughts like the above should flit like a dream for a moment before their bewildered imagination.

"We now continue our way straight forward, our eyes being better accustomed to the faint light, and all fear gone, by having assured ourselves that we are only under the hill of Dudley Castle. By turning round and looking back the way we have come, after passing the third or fourth pillar, the view is truly sublime;—the vast expanse, the enormous irregular pillars, half hanging, half standing in the chasm, and the few but strong rays of light that peer in at the loopholes on the eastern side, combine to make a subterranean prospect worth going round 'the globe which we inhabit' to see, and which must dwell in the mind after being thus seen while that mind retains recollection.

"It would be highly dangerous to advance up the tunnel many steps beyond this point without a good sight, as there is not the least opening to admit a faint ray from above. The mine and the canal extend half a mile further, and some distance from the point we have now reached the railway joins it, and the stone from that tunnel thus obtains the advantage of water carriage. Should any one, or any party, wish to penetrate further, and see all that is to be seen in this region of wonders, a guide with a light, or even Charon with his boat and attendants, will do the bidding of their patrons, and are easily called. The tunnel is very extensive, and the works in it give employment to many hands, who are seen busy at their various occupations of drilling the rock, blasting it with powder, throwing the smaller fragments into the boats, breaking others, or assisting in pushing the laden boats along the canal.

"Having satisfied ourselves, and collected all the mineral and mining information we can, we retrace our steps to the mouth of this, called the Great Cavern, or by some the New Basin Cavern, fully convinced that there is at least one place that neither pen nor pencil can fully portray. And now our list of subterranean scenes is done; but, had we more to offer, their tameness would make their examination tedious, after seeing what we have just left behind. For this reason the great cavern ought always to be seen last, and besides, the mind is better prepared to comprehend it after seeing the others, which are as it were miniature representations of it."

This cavern is thus described by Dr. Booker:—

"This immense cave is called 'The Dark Cavern.' Follow the steps of an experienced leader, not turning aside to the right hand or to the left,—

> So, by and bye,
> Through the abyss so drear, will safe be found
> A darksome way, which else thou wilt not spy,
> That, deep descending through the hollow ground,
> With dread and horror is encompass'd round.

The guide will send some person on before, as a cautionary herald, to prevent any explosive blasts taking place, by gunpowder, for the purpose of loosening or turning aside large masses of limestone. When heard, while sufficiently aloof from them, these explosions, resembling distant thunder, will harmonise with the awfully sublime character of the cavern. On descending the steps from the light of day, at first a fearful

indistinctiveness will prevail around, no object scarcely, except the guide, being visible. The eye, however, will by degrees accommodate itself to the novel and obscure region in which it is to act; and the massive pillars, the undefined extent, and lofty vaulted roof, of what is seen and measured so imperfectly, will induce the spectator, for some time, to imagine himself in one of those vast subterranean edifices mentioned by travellers at Herculaneum, Balbec, or Palmyra. As he advances with cautious and uncertain steps, lights are perceived glimmering in 'the dark profound;' and some of them being held by pallid beings, forms ghastly to the sight,—

Terribiles visu formæ,—

he will almost fancy himself traversing the realms of Pluto, especially as by a stone, cast a little to the right, he will find himself on the brink of water. This being totally invisible, imagination will convert it into an Acheron or Cocytus, both deep and dangerous. But fear soon subsiding, lights more remote, twinkling at unequal distances, will cause a momentary supposition that he is in some unknown part of a city, when, midnight having wrapped the skies in darkness and the inhabitants in sleep, the lamps, in different diverging streets, are beginning to wane in lustre. Again, when he perceives a long boat emerging from an unseen arch, or moored close to a bank ready to receive him, the former idea of being in the infernal regions will recur to him. In truth—to afford a tolerable idea of this stupendous cavern and its singular appendages to one who has not an opportunity of entering it, little

more is requisite than to refer to Virgil's description of those regions. The steersman of the boat, even to his very garb, is the exact counterpart of Charon; and the expectant claimants to be deported in the ready bark, being sometimes a numerous party, are also not inaptly portrayed by the same charming poet:—

Matres, atque veri, pueri innuptæque puellæ—

matrons and husbands, youths and unwedded maidens —all actuated by one of the most powerful stimulants in human nature, curiosity.

"The startled ear will assimilate the rolling rumbling noise to repeated discharges of distant artillery. The clinking of mattocks, and the reverberating blows of sledge-hammers, breaking the larger fragments into smaller pieces previously to throwing them into the boats, will again remind the astonished ear of the Tartarian caves of Etna, where the Cyclops ply their thundering occupation. The torches seen in the different parts of the cave—these stationary, and those moving in different directions—some elevated to the lofty roof, and others, like *ignis-fatui*, flitting along nearly on a level with the dark waters,—will be among such novel objects as are calculated to surprise the beholder. Contrasted with the meteoric glare of such artificial splendours, will be gladly noticed the softer rays of natural light occasionally seen shooting from above, through rude apertures, made to admit the breath of heaven, and to afford a vent for smoke occasioned by exploded gunpowder. Thus beautifully does Spencer describe such softened rays in his 'Faery Queene':—

"A meek faint shadow of uncertain light,
Such as a lamp whose life doth fade away;
Or as the moone, clothed with cloudy night,
Doth show to him that walks in fear and sad affright.

"Nor less beautifully is the same idea expressed by Lord Byron, in his 'Prisoner of Chilon':—

"A sunbeam that hath lost its way,
And, through the crevice and the cleft
Of the thick wall, is fallen and left,
Creeping o'er the floor so dapm,
Like a marsh's meteor-lamp.

"On returning towards the mouth of the cavern, still broader streams from the 'fount of day' will be hailed with additional pleasure. Then it is that the colossal pillars, which sustain a wood-crowned hill over them, will satisfy even timidity itself, by their magnitude and stability, that the danger it lately apprehended was visionary."


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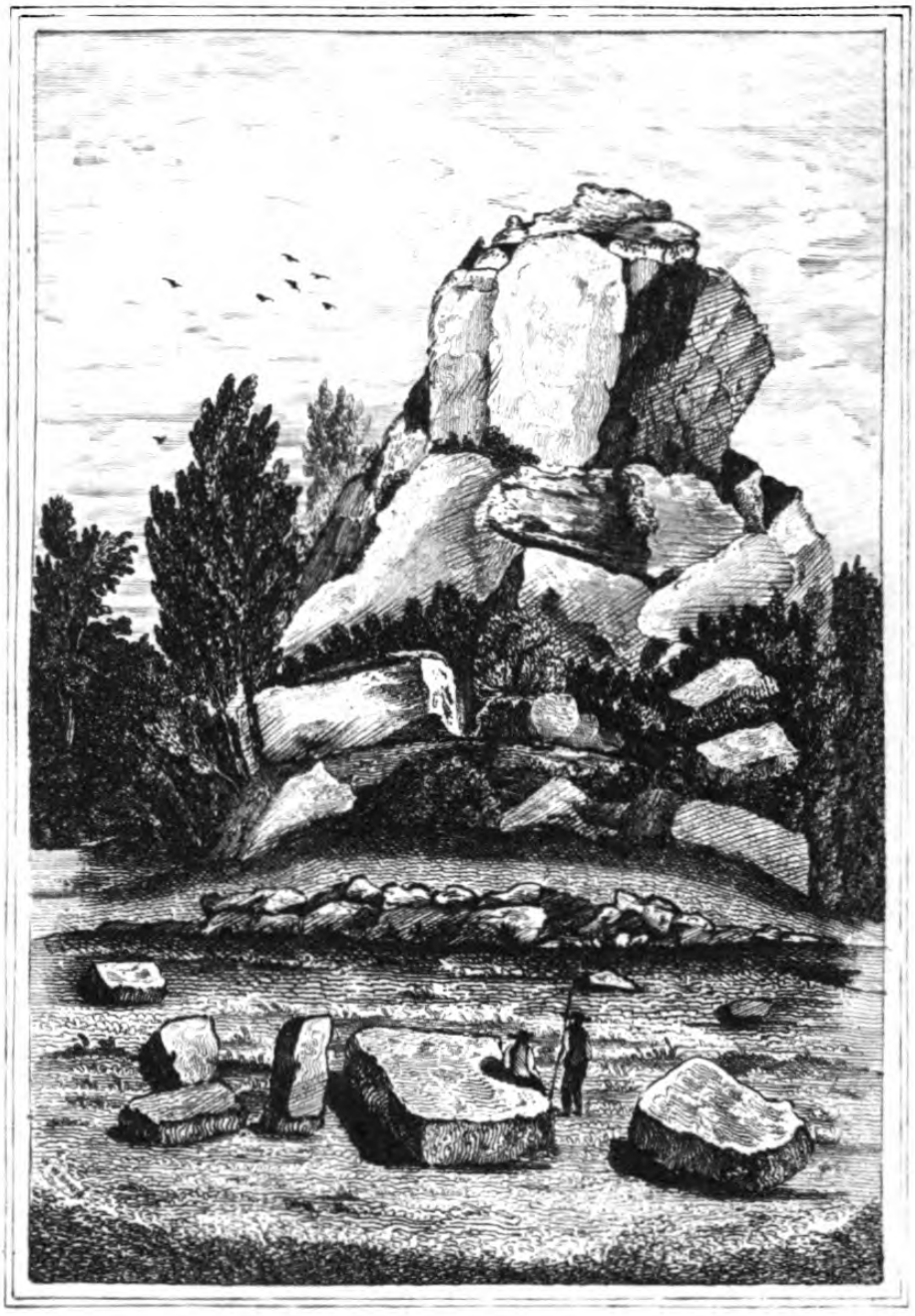


ROWLEY HAILSTONE.

CHAPTER VI.

GEOLOGY—MOSAIC ACCOUNT OF THE CREATION—CHAOS—LIGHT—PRIMARY FORMATIONS—UPLIFTINGS—SECONDARY FORMATIONS—VEGETATION—INSECTS AND FEATHERED CREATION—GREAT REPTILES—TERTIARY FORMATIONS—MAMMALIA—MONSTER QUADRUPEDS—MAN—RECAPITULATION.

The immediate locality of Dudley Castle opens so rich a field for geological research, that we have attempted a brief and popular outline of the comparatively modern yet pleasing science, Geology, for that portion of our readers who may not be conversant with its first principles.

The proper object of the geologist is to investigate and examine the component parts of the earth---to observe their combination and arrangement---to assign causes for the convulsions which have at different periods and at different places tended to form its superficial appearance---and hence to give a reason for the various changes which have taken place in its structure.

The usual impression of a reader in perusing the first chapter of Genesis, is that the creation in the first verse, and the whole of the subsequent events to the creation of man, occupied precisely six days of our

present time; but the Christian geologist sees at once that it is very difficult to reconcile known circumstances with this supposition. Certain difficulties appear to exist, which seem to require some correction of the popular comments on the sacred text: we shall show, however, that real discrepancies do not exist—not any alteration in the text, but a variation in the interpretation. The facts of nature cannot contradict the declarations of the Omnicient Creator; and the Christian need not fear to institute a comparison between them.

The history which Moses has given us of the creation of the world, and its state to the commencement of the days, is evidently a mere outline. The great object of the Divine Spirit, under whose guidance he wrote, was to detail the history of man, his character, condition, and prospects. A theory of the formation of the earth ought, therefore, to be only a detailed description of the Mosaical history, a finished picture from the outline sketch which the Jewish legislator has given us.

"*In the beginning God created the heavens and the earth.*" GOD is the great universal cause from which all things have proceeded. Philosophy has discovered to us that the creation was the work of an intelligent Being, but it is Revelation alone that can teach us His character and attributes. "I am the Lord that maketh all things, that stretcheth forth the heavens alone, that spreadeth abroad the earth by myself."---*Isaiah* xliv. 24. "Let all the inhabitants of the world stand in awe of him, for he spake, and it was done, he commanded, and it stood fast."---*Psalm* xxiii. 8, 9.

That the beginning does not refer to the first day spoken of by Moses is certain: the creation of the planet was no doubt instantaneous, as regards the materials, but the arrangement, at least of the crust, was gradual. The world had a *beginning*, and was therefore made *in time*, by the Omnipotent Creator, which is a bar equally against Atheism, and Materialism.

Dr. Chalmers says, "Does Moses ever say that when God created the heavens and the earth, he did more, at the time alluded to, than transform them out of previously existing materials? Or does he ever say that there was not an interval of many ages betwixt the first act of creation, described in the first verse of the book of Genesis, and said to have been performed in the beginning, and those more detailed operations, the account of which commences at the second verse, and which are described to us as having been performed in so many days? Or, finally, does he ever make us understand that the generations of man went further than to fix the antiquity of the species, and of consequence that they left the antiquity of the globe a free subject for the speculations of philosophers." Millions and millions of years might have rolled on from the *beginning* to the commencement of the first epoch of creation. "*Of old* hast thou laid the foundations of the earth, and the heavens are the work of thy hands" —*Psalm* cii. 25. "And thou, Lord, *in the beginning*, hast laid the foundation of the earth"—*Heb.* i. 10.

"*And the earth was without form and void*," *&c.*—Dr. Bloomfield, Bishop of London, says—"As we are not called upon by Scripture to admit, so neither are

we required to deny the supposition, that the matter, without form and void, out of which the earth was formed, *may have consisted of the wrecks and relics of more ancient worlds*, created by the same Almighty Power which called the world into being, and will one day cause it to pass away."

While some stars have disappeared from our sight, others seem curdling into existence. The sublime discoveries of Sir William Herschel have shown us that the realms of space abound in nebulous bodies in every varied condition, from that of a diffused nebulosity to suns and worlds like our own. Some of these bodies appear as mere clouds of attenuated light---others as if curdling into separate masses---while many seem assuming a spherical figure, and finally appear as orbs of light, with halos like our sun.

It is allowed by all geologists that the ocean has for a long time occupied all countries. During the period when this dark abyss of waters prevailed, the earth was invisible and unfurnished---a chaotic mass, which was incapable of sustaining any form of life, where nothing existed but the bare elements of nature. We may presume that then the early operations of geological formation and arrangement began, by producing the fundamental rocks, and thus providing materials for all the derivative strata, which, in the course of their consolidation, were destined to embosom such an endless variety of extraneous contents.

"*And God said let there be light*," *&c.*---Light, heat, electricity, and magnetism, are now clearly proved to be modifications of one and the same existence, and the

great acting principles of the law of nature.—Thus the very objection which the sceptics have made against the Mosaic history of the creation, which they represent as an absurdity, seeing that it supposes light to have preceded the existence of the body from which they represent it to proceed, becomes an unanswerable proof of the divine character of that production---in fact, it was an emanation from Himself, for "God is Light." It was not within the precincts of mere human knowledge, when Moses wrote, that the sun was not the visible fountain of light. Yet he states it otherwise: he makes the existence of light precede that of the sun, declaring that the former was created on the first day, and the latter on the fourth.

That light exists without the presence of the heavenly bodies, requires no reasoning to prove; it may be struck out of the simplest stone. The volcanoes, which emit torrents of light, teach us that it is to be found in the very bosom of the earth. How does the diamond---how do other precious stones exhibit light, unless it be from this peculiar capacity to imbibe and retain this luminous fluid?

> Th' unfruitful rocks, impregn'd by Thee,
> In dark retirement forms the lucid stone;
> The lively diamond drinks Thy purest rays,
> Collected light compact.
> At Thee the ruby lights its deepening glow,
> And with a wav'ring radiance inward flames;
> From Thee the sapphire, solid ether, takes
> Its hue cerulean; and, of evening tinct,
> The purple-streaming amethyst is Thine:
> With Thy own smile the yellow topaz burns.

How wonderful is it, again, that by the combination of a few pieces of dissimilar metals, a fluid, if so it may be called, should be generated, which, when passed through carbon, produces a light so powerful as to be insupportable to the eye---a fluid which will also produce so great a heat as to consume the hardest metals with the same ease as if they were tinder!

It is evident that ignition and fusion have always existed in the earth on a great scale, and this is admitted by all, whether they believe in the fusion of a central nucleus or not. When, however, we consider that the ratio in which temperature increases in descending our mines may be about 212° Fahrenheit at something more than a mile below the surface, and that, by means of Artesian boring, it is proposed to obtain water sufficiently warm to heat the royal conservatories of Paris, we must favour the latter opinion. The deepest mines in great Britain, in comparison to the bulk of the earth, can only be compared to the minute cracks sometimes observable in the varnish of a common globe.

Rocks are of two kinds, *unstratified* and *stratified*. It is quite evident that the formation of the two must have been totally different. The whole character of the unstratified rocks prove that they must have come *to* the surface from the interior of the earth, after the deposition of the strata; that is, they have been ejected among the strata from below in a melted condition ---while the stratified have been formed under water, by deposition *from* the surface downwards. They are divided into three divisions---primary, secondary, and tertiary.

The *primary*, or unstratified rocks, lie under the stratified. They consist of granite, slate, and many hard rocks, lying in alternating beds of great thickness, and it is a singular fact, that *no trace of animal remains has yet been found in them.* Granite (so named from its granular structure) is the great framework of the earth's crust. It is of igneous origin, and may yet be forming in the deeper parts of the earth, round the centres of volcanic fires. Most of the obelisks and statues which adorned the Egyptian temples are formed with syenite or oriental granite. Those two ancient works of art, Memnon's Head and Pompey's Pillar, are formed from this kind of rock. The beauty and fitness of granite, as a building material, may be seen in many of the public edifices in London, as Waterloo and London Bridges.

In the fissures of the early rocks we find metallic veins. It is well known to electricians that currents of electricity circulate round the globe from east to west, and that this mysterious agent passes more free in this than in any other direction. These currents, acting on the saline substances contained in the water, would gradually decompose them, the metal or base being determined towards the negative pole, or the electro-negative rock, and the acid towards the electro-positive rock. However slow this process might first have been, the deposition of the metal would cause it to become more and more energetic. Becqueril has obtained, by means of weak and long-continued action, many of the metals, metallic sulphurets, and other metalliferous and earthy compounds, not a

few of them beautifully crystalized, and precisely resembling those found in nature. Mr. Cross has also, by means of voltaic batteries, excited by water only, obtained a crystal of quartz nearly a quarter of an inch long.

We have stated that the unstratified rocks lie under the stratified. This order is never reversed, except in cases which are deceptive appearances, and where they have protruded between strata. The ejection of the unstratified rocks from below is proved by the penetration of their veins into the superincumbent strata in an upward direction, often with the most slender ramifications, to a great distance. That they were ejected in a melted state is shown by the close resemblance in mineral composition of the unstratified rocks to the products of existing volcanoes. Granite, in veins, has never been seen to penetrate beyond the lower strata; but whinstone and basalt send out veins through all the strata.

"*And God called the dry land earth,*" *&c.*—The next order of rocks we call *secondary;* they are so called in contra-distinction to the primitive rocks, which are formed of crystaline matter. They are *mechanically* formed, that is to say, rocks formed by pieces having been cemented together. In these rocks we have distinct proof that land was raised above the ocean, and that tides and currents acted on the shores, as in our own times. Here we find fragments of the primitive rocks rounded by the action of the water, just as pebbles are rounded on our coast. When rocks are composed of large pieces, rounded by the water, and

cemented together, we call it *pudding-stone*; when pieces are small, we call it *coarse, or final sand stone.*

Resting, then, upon the primitive rocks, we find the *transition* sandstone, or as it is called by the Germans *Grauwacke*, or *Greywacke Group.* It is usually of a grey colour, but this is not essential to characterise it, as it may be brownish or white. It is a kind of slaty rock, and mechanically formed, for it contains fragments of quartz, and other primitive rocks.

After this we have another kind of sandstone, called the *Old Red Sandstone Group* which is characterised by containing a great number of beds, composed of water-worn fragments and sandstone layers of a fine grain, and by being usually of a deep red colour. It contains very few organic remains, but plants and marine shells are sometimes found in it. It is the principal rock in Herefordshire.

The *Mountain Limestone Group* comes next in order. This group is particularly interesting to the visitor to Dudley Castle, as that ancient pile not only stands upon the mountain limestone, but is constructed with it. It is usually very compact and crystaline, yielding in many places excellent marble for chimney-pieces. It contains a great variety of organic remains, consisting of corals, and many species of zoophytes, marine shells, &c., which not unfrequently make up the mass of the rock.

The *Coal Group.* The great body of coal lies at the upper part of the transition group; occasionally we find it *in* the transition rocks, but the great accumulation lies *upon* them, certainly not below them, and not

in the primitive rocks. Hence, if we were in a country composed of primitive rocks, we should say at once that is not a coal country. Where there is no mountain limestone we cannot have coal.

The Jewish historian thus records the progress of creation :—"*Let the earth bring forth grass, and herb yielding seed,*" *&c.* We find species of the most perfect developed class, the dicotyledonous, in the period of the secondary formations, and the first traces of them can be found in the oldest strata, while they uninterruptedly increase in successive formations till they give rise to coal.

In noticing this era in creation, we observe that the first living beings were of the lowest scale, those which built coral, the lacuatrine which formed shells, and a few others. We cannot find in these beds traces of land animals, yet there is an abundance of vegetable matter, belonging both to sea and land.

The flora of the coal beds consist chiefly of large cryptogamic plants, ten feet high and five or six inches in diameter, and tree ferns, which attain an altitude of from forty to eighty feet.

The greatest part of iron is made from a substance found in coal basins, alternating with coal, sandstone, and shale; it is an oxide of iron joined to clay, and consequently called *Clay Ironstone.* It is exactly like rock, and has no metallic appearance.

The *Red Marl Group.* We shall now proceed to the next series of secondary formations, which lie over the coal. They are very different indeed, generally, in situation from the primitive and transition,

and they are also very different in their structure and mode of lying. The primitive and transition series are frequently highly inclined; many of the primitive rocks are vertical, and so is the coal sometimes. When the beds are parallel to one another, they are said to be *conformable;* but if a number of beds be inclined, then they are said to be *unconformable* to those below.

The lowest of the series of secondary beds is one called *Magnesian Limestone:* it lies frequently on the coal formation. The magnesian limestone receives its name from the circumstance of the limestone containing about twenty or thirty per cent. of magnesia.

The next bed is one called *New Red Sandstone.* It is not finely grained, but lies in a hard rock. Many of the ancient buildings are erected with it. Chester is built with it. It consists of a number of beds of red marly sandstone, often variegated by stripes and patches of grey, blue, and white. In Worcestershire and Cheshire it contains valuable mines of salt, and copious brine springs; and in other places great quantities of gypsum, or alabaster, which, when broken up, burnt, and then ground to powder, forms Plaster of Paris.

The next group is called the *Oolite Group,* from the prevalence in it of a kind of limestone, composed of small round grains, like the eggs in a row of a fish, whence oolite, from two Greek words, signifying *egg* and *stone.* It contains about twelve systems of beds, consisting of limestone of different qualities, and of clays—"Fuller's earth" is a variety. The celebrated building stones of Portland and Bath are found in it,

and St. Paul's Cathedral, London, is built with oolite from quarries near Burford, Oxfordshire.

The last, or uppermost of the secondary rocks, is the *Chalk Group*, which is separated from the oolite group by several beds of sands, clays, and sandstones. In France it surrounds and underlies the Paris basin. It also covers a great extent of country in England. In the upper chalk are imbedded spherical masses, called *flint*. The ocean of the chalk appears to have teemed with dog-fish, and other genera of the shark.

In our observations on the progress of creation, we shall not stop to notice the sun, moon, and stars, but shall pass on to consider the work of the fifth epoch.

"*Let the waters bring forth abundantly*," *&c.*—Hitherto, as we have shown, the living beings first placed on the earth were lowest in the scale of creation, zoophites, &c., in most instances destitute of the power of locomotion, with an abundance of vegetable matter, belonging both to sea and land. But now the winged insects and feathered creatures were called into existence; creeping things, "going upon all four," that could raise themselves up in the air."—*Levit.* xi. 20. Enormous foot-prints have been discovered in various quarries of new red sandstone.

"In the New Red Sandstone," says Professor Hitchcock, in the American Journal of Science and Arts, "in the valley of Connecticut, there have been laid bare in quarries, along a considerable tract of country, surfaces presenting foot-prints of many various species of birds, apparently belonging to the order *Grallæ*, or Waders. The smallest of these prints indicates an animal with

a foot about an inch long, and a step of from three to five inches; but they vary upwards in size, till they reach something which may well be regarded as gigantic. Let it be remembered that the African ostrich, which weighs a hundred pounds, and is nine feet high, has a foot of ten inches, and a leg four feet long. It is the most stupendous of existing birds. But the largest of the foot-prints in the Connecticut sandstone being fifteen inches in length, exclusive of the largest claw, which measures two inches, and the steps being from four to six feet apart, denote a considerably larger bird, the legs of which, probably, were not less than seven feet in height."

In the oolite group we find beings of an astonishing size, called in our translation of the sacred Scriptures "great whales," or more correctly "great reptiles," the word *than* or *thanin* was a sort of generic, or rather classical name, to designate the serpent and lizard tribes, and is the same word which is used in *Ezekiel* xxix. 3; *Job* xli.

It will be impossible not to acknowledge as a certain truth (as a celebrated geologist, Cuvier, remarks) the number, the largeness, and the variety of the reptiles which inhabited the sea or the land at this epoch; and Mr. Mantell observes, that there was a period when the earth was peopled by oviparous quadrupeds of the most appalling magnitude. Reptiles were the lords of creation.

The most remarkable of the fossil remains which are found in the secondary strata are those which have been called ichthyosaurus, plesiosaurus, megalosaurus,

iguanoden, and pterodactyius. The *ichthyosaurus* is so called from the character of the animal partaking at the same time of the nature of a fish and of the lizard tribe—*ichthys* and *saura* being two Greek words, signifying *fish* and *lizard*. Its head resembles that of a crocodile, only it is much larger and sharper, its snout ending in a point almost as acute as the beak of a bird: it has a most formidable supply of sharp conical teeth, sixty in each jaw. Its head was of an enormous size, for jaws measuring eight feet in length have been found; and it was furnished with a pair of eyes of still more extraordinary proportion, for the oval hollows for that organ in a skull belonging to a gentleman at Bristol measure fourteen inches and a half in their largest diameter. The head was about a fourth of the whole length of the animal, and was joined to the body by a very short neck: the back-bone was composed of joints or *vertebræ* different from those of land animals, and similar to those of fishes: it had four paddles, like those of a turtle, in the lower parts of its body, and by means of these and its very powerful tail it must have darted very swiftly through the water. It was a most singular combination of forms, for it had the snout of a dolphin, the teeth of a crocodile, the head and breast-bone of a lizard, extremities like the marine mammalia, and vertebræ like a fish.

The *plesiosaurus*, from the Greek word *plesion, near*, so called on account of its near approach to the lizard tribe, must be ranked with the ichthyosaurus among the wonders of old belonging to the animal kingdom, on account of its possessing so singular a combination

of different types of organization. It united to the head of a lizard the teeth of a crocodile, a neck resembling the body of a serpent, a trunk and tail having the portions of an ordinary quadruped, the ribs of a chameleon, and the paddles of a whale. Its most remarkable characteristic, however, was the enormous length of the cervical portion of the vertebræ. This was almost equal to half the entire length of the body and tail united, and was composed of from twenty to forty vertebræ. In mammalia, from man to the giraffe, there are seven vertebræ in the neck; reptiles have from three to eight; birds many more. The swan, which has the most, is provided with twenty-three. The great length of the neck of the plesiosaurus is, therefore, a very singular feature in its form. Its head is so small, that its length is not more than a fifth part of that of the neck. The total length of this creature is about twenty feet. It is supposed to have carried the neck erect or arched, in readiness to dart upon its prey, which consisted of fish and of its own congeries.

The *megalosaurus* was also an animal of great size. Dr. Buckland, a few years ago, discovered in a quarry near Woodstock, in Oxfordshire, some of its bones. According to the opinion of Cuvier, who examined them, they must have belonged to an individual of the lizard tribe, measuring forty feet in length, and having a bulk equal to that of an elephant seven feet high. Its ordinary food is supposed to have been the smaller reptiles, crocodiles, and tortoises, whose remains occur abundantly in the strata where those of megalosaurus abounds.

The *iguanodon* was first discovered by Dr. Mantell. Its appearance realizes the wildest poetical fictions of old; for it has been ascertained to have measured from seventy to one hundred feet in length; the circumference of its body was fourteen feet and a half; the length of the thigh and legs, eight feet two inches; the foot, from the heel to the point of the claw, six feet; the height from the ground to the top of the head, nine feet. On the snout of this monster was a nasal horn or bony protuberance, about the size of the lesser horn of the rhinoceros.

The *pterodactylus*.—Of all the wonderful beings which the researches into fossil osteology have brought to light, those flying reptiles—a denomination almost contradictory—called pterodactyles, are, unquestionably, the most extraordinary. They varied from the size of a snipe to that of a cormorant. In external form, they somewhat resembled our modern bats and vampires. Most of them had the nose elongated, like the snout of the crocodile, and furnished with not less than sixty sharp conical teeth. Their eyes were of great size, apparently enabling them to fly by night. From their wings projected fingers, terminated by long hooks, like the curved claw on the thumb of the bat. These must have formed a powerful paw, wherewith the animal was enabled to creep or climb, or suspend itself from trees. It is probable that they had the power of swimming, which is so common in reptiles, and now possessed by the vampire bat, of the island of Bonin. Thus (says Buckland) like Milton's fiend, all qualified for all services and all elements, the creature was a fit

companion for the kindred reptiles that swarmed in the seas or crawled on the shores of a turbulent planet.

> The fiend
> O'er bog or steep, through straight, rough, dense or rare,
> With head, hand, wings, or feet, pursues his way,
> And swims, or sinks, or wades, or creeps, or flies.

With flocks of such-like creatures flying in the air, and shoals of no less monstrous ichthyosauri and plesiosauri swarming in the ocean, and gigantic crocodiles and tortoises crawling on the shore of the primeval lakes and rivers, air, sea, and land, must have been strangely tenanted in these early periods of our infant world.

"*And God made the beast of the earth after his kind,*" *&c.*—We shall now proceed briefly to notice the *Tertiary Formations*, which are distinguished from the secondary by containing animal remains identical with the living species. Mr. Lyell, in his "Principles of Geology," divides this epoch into four periods. The first or earliest period, which includes the deposits immediately after the chalk, he calls *Eocene* (the term *cene* from a Greek word, signifying recent), because recent species just then began to appear; the second period he calls *Miocene;* the third period, the *Older Pliocene;* and the fourth period, *Newer Pliocene.*

Eocene Period.—The celebrated Paris and London basins are of this period. In the former, about fifty species of quadrupeds, most of them Pachydermata, or the thick skinned, which contain at present only four living species, inhabiting low places and marshes. There have been found also, in the same beds, bones

of extinct species of fox, dormouse, squirrel, and opossum, and about ten species of birds.

Miocene Period.—A series of deposits, possessing characters which point out an epoch of formation distinct from, and probably long subsequent to, that of the strata lying immediately above the chalk. These contain bones of extinct species of the dinotherium, elephant, horse, stag, pig, &c.

Older Pliocene Period.—These tertiary beds abound in marine shells, and in the remains of land quadrupeds, and of marine mammalia, so that it is evident the bones of the land animals were transported by running water to the bottom of the sea; and that there they lay a long time has been proved by the discovery in the marl of the thigh bone of an elephant with oyster shells adhering to it.

Newer Pliocene Period.—To this period belong many accumulations of loose gravel, which cover vast tracts of country in most parts of the globe, and which are called by some geologists diluvial gravel, and diluvium, because they suppose them to have been produced *by some sudden flood passing over the earth.*

This gravel contains, in many places, immense quantities of the bones of extinct species of quadrupeds, especially the elephant and rhinoceros. The number of elephants now living upon the face of the earth is considered to be greatly inferior to that found in the northern latitudes. In Siberia the quantity of elephants' bones is extraordinary. Eight different species of the mastodon have been discovered. This species appears to have been as tall as the elephant, but with

larger and thicker limbs, and having gigantic tusks above twelve feet in length. The bony structure of that clumsy monster, the *megatherium*, was found in diluvial soil near Buonos Ayres. The animal was above fourteen feet long, including the tail, and eight feet high; its claws were of enormous size. In Kirkdale Cave, near Malton, in the East Riding of Yorkshire, which was explored and described by Dr. Buckland, there were found the bones of bears, tigers, hyænas, wolves, and foxes, mixed up in one common mass with those of the elephant, rhinoceros, hippopotamus, horse, ox, deer, hare, rabbit, rat, mouse, and several birds, such as pigeons, larks, ducks, ravens, and snipes. From the great proportion of hyænas' bones, and the intermixture of its peculiar hard earthy dung, it is thought that these animals must have inhabited the cave for a very long period, and that the bones of the other animals are the remains of living prey or dead carcasses dragged by those ravening beasts into their den.

"*And God said, Let us make man*," *&c.*—No human remains have been found among extraneous fossils. It is in alluvial deposits of recent date *that the remains of man first appear*. Human skeletons, and the rude instruments of a half-civilised race, are found associated with the bones of animals which still inhabit this country, and in some instances intermixed with the osseous remains of a few species that appear to have been extirpated by man. Hence we see the comparatively recent period at which man became an inhabitant of the earth, and exercised dominion over the animal creation,—a fact in strictest accordance with those

sacred records which reveal the moral obligations and destiny of the human race.

In taking a retrospect of our subject, we shall use the language of the "Encyclopædia Britannica:"—

"The materials of which the solid crust of the earth is composed have been arranged into the four following classes:—1. Those rocks which contain neither animal ner vegetable remains themselves, nor are intermixed with rocks which do contain them, and are therefore called *Primitive* or *Primary Rocks*, the period of whose formation is considered as antecedent to that of the creation of organic beings: those are granite, gneiss, mica slate, and clay slate, which occur abundantly in all regions of the globe, with quartz rocks, serpentine, granular limestone, &c., which occur more sparingly. 2. Rocks containing organic remains, or generally associated with other rocks in which such substances are found, and which, as having been formed posterior to the existence of organised beings, are termed *Secondary*: these are greywacke, sandstone, limestone, and gypsum of various kinds, slate clay, with certain species of trap, and they are found lying above the primary or older rocks. 3. Above these beds of secondary rocks, beds of granite, sand, earth, and moss, are found, which have been termed *Alluvial Rocks or Formations*. This class comprehends those rocky substances formed from previously existing rocks, of which the materials have been broken by the agency of water and air; they are therefore generally loose in their texture, and never covered with any real solid and rocky secondary strata. 4. *Volcanic Rocks*, under which class are comprehended all

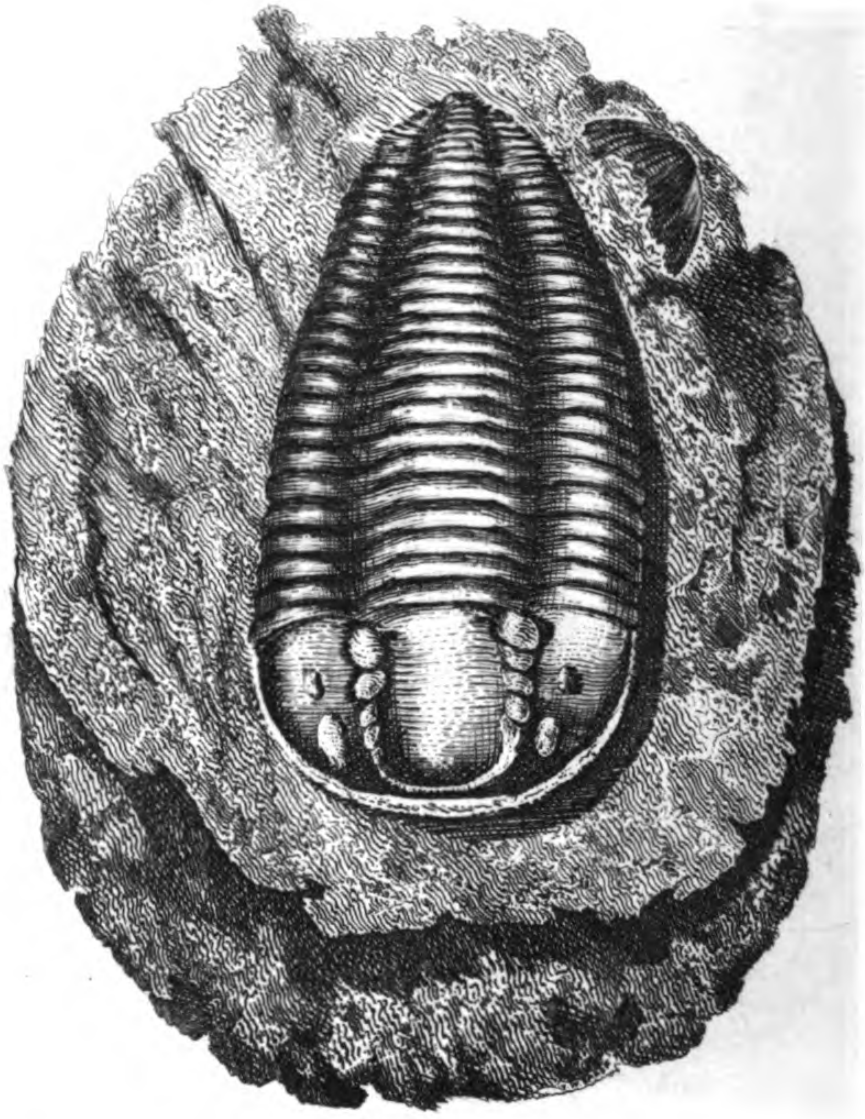
those rocks, beds of lava, scoriæ, and other matter thrown out at certain periods of the earth's surface by the action of subterraneous fire.

"If we examine the secondary rocks, beginning with the most ancient, the first organic remains which present themselves are those of aquatic plants and large reeds, but of species different from ours. To these succeed madrepores, encrenites, and other aquatic zoophites, living beings of the simplest forms, which remain attached to one spot, and partake, in some degree, of the nature of vegetables. Posterior to these, are ammonites, and other mollusci, still very simple in their forms, and entirely different from any animals now known. After these, some fishes appear; and plants consisting of bamboos and ferns increase, but still different from those which exist. In the next period, along with an increasing number of an extinct species of shells and fishes, we meet with amphibious and viviparous quadrupeds, such as crocodiles and tortoises, and some reptiles, as serpents, which show that dry land now existed. As we approach the newest of the solid rock formations, we find lamantins, phocæ, and other cetaceous and mammiferous sea animals, with some birds. And in the newest of these formations, we find the remains of herbiferous land animals of extinct species, the paleotherium, anaplotherium, &c., and of birds, with some fresh water shells. In the lowest beds of loose soil, and in peat bogs, are found the remains of the elephant, rhinoceros, hippopotamus, elk, &c., of different species from those which now exist, but belonging to the same genera. Lastly, the bones

of the species which are apparently the same with those now existing alive, are never found except in the very latest alluvial depositions, or those which are either formed in the sides of rivers, the bottoms of ancient lakes and marshes now dried up, in peat beds, in the fissures and caverns of certain rocks, or at small depths below the present surface, in places where they may have been overwhelmed by debris, or even buried by man. Human bones are never found except among those of animal species now living, and in situations which show that they have been, comparatively speaking, recently deposited."

That the earth has undergone many violent revolutions, no possible doubt can exist in the mind of any one who has paid even the most superficial attention to the discoveries in geological science during the last and present centuries; but the mighty process by which our globe was originally formed is a mystery, quite as unfathomable now as it was in the darkest periods of human existence. Let us, then, be content with the sublime exordium of the great Jewish lawgiver, and we shall find that the account he gives of the creation, though eloquently brief, is neither allegorical nor mystical, but corresponds in its bold outline with the phenomena which is exhibited to us in the great book of nature. It is true that there is nothing in the writings of Moses either calculated or intended to satisfy curiosity: his object was simply to declare that the whole was the work of an Almighty Architect, who, as the Creator and Sovereign of the Universe, was alone to be worshipped.


BODLEIANA



PEDICULUS MARINUS TRILOBOS.

CHAPTER VII.

GEOLOGY OF THE DISTRICT — LIMESTONE — COAL — IRON — CONVULSIONS OF NATURE — BASALT — FAULT — EXTINCT VOLCANOES — FIRE-CLAY — NEW RED SANDSTONE.

The neighbourhood of Dudley (as a scientific gentleman remarks) is not only rich in treasures of mineral property, consisting of physical prosperity, but rich in wealth of a higher kind—coins from the mint of nature, and structures showing her handiwork. We have before stated, that the hill which the ruins of the castle so finely embellish, as well as the adjoining one called the Wren's Nest, consist of the *mountain limestone*. What must be our astonishment, when we reflect that the enormous masses composing the same were the work of creatures which belonged to the lowest type of animal existence, whose bodies were mere masses of jelly—a sort of neutral ground on the confines of the animal and vegetable worlds. The architects who constructed these rocks were corallines of various kinds; while echini and several varieties of shell-fish existed upon the surface and occupied the crevices; the percolation of carbonate of lime from the destruction of all these cemented that part abandoned by the polyps into a solid mass, and a reef was thus

formed of hard and compact rock. The early naturalists were so persuaded that the whole family of corallines belonged to the vegetable kingdom, that they called them zoophytes, or animal plants.

The labours of the coral polyps were among the first vestiges of organic existence. In traversing the Dudley caverns,—which in grandeur of appearance, if not in splendour and singularity, may vie with the celebrated grotto of Antiparos or the idol caves of Elora,—the visitor will soon discover that in the Dudley rock the multitude and variety of organic remains are truly astonishing, and that the sea in which these were deposited must indeed have swarmed with living beings. After a shower of rain, the surface of the flag-like beds of the upper limestone at the Wren's Nest appear so thickly studded with corals, encrinites, shells, &c., that not the smallest space can be said to be left unoccupied. Between sixty and seventy species of coral have been discovered, many of them occurring in continuous masses several yards in extent, proving beyond all doubt that the origin of this limestone was a coral reef, first built up from the bottom of the ancient ocean by the coral polyps, creatures which, though belonging to the lowest grade of existence, are still rearing numerous islands in the south sea.

Among these memorials of other times, the *pendiculus marinus trilobus* holds a distinguished place. From its locality to this neighbourhood, it is usually denominated the Dudley Locust. This fossil varies in size, from five inches in length and two inches and a half in breadth to the size of a pea. In some the eye

is reticulated and projecting; in others, which have no retina in the eye, there is an elliptical notch through the pupil. The trilobite—so called from its three-lobed appearance—is now entirely extinct.

The Stone Lily, or as it is sometimes called the Lily Encrinite, from its resembling that flower upon its stalk, also deserves our attention. Fixed to the spot where it existed by one extremity of the stalk, its separable parts stretched out like arms to receive its prey. That stalk was not a single piece, but consisted of a number of distinct joints, like a necklace of beads, perforated through its whole length, and the joints when separated had beautifully figured surfaces. The tentacula of this singular production, when expanded upon the surface of the water, resembled the open leaves of a flower. It was, however, gifted with the sensitive faculty of instantly folding as many of these tentacula as were requisite for the purpose of grasping whatever insect might be allured to settle within the sphere of its power. It also appeared to be gifted with what is termed a pelvis to receive its food, and likewise with a vertebral column, or tubular spine, communicating to every termination at the coralline upon which it was seated. A beautiful specimen of encrinite is placed in the museum of the Geological Society at Dudley; and it is said, in the reports of this society, "that the skeleton of this animal when alive consisted of upwards of 20,000 joints."

Here we observe cemented together the organic remains of beings "which thousands of years ago were endowed with life and sensation—creatures that moved

on the bottom of the great deep, or sported on the surface of the wave—that spread their tentacula to catch their prey, or burrowed in the slime to avoid a rapacious foe. But now, life and sensation gone—as if embalmed by the hand of Nature herself—they retain their original shape and configuration, having acquired a substance as solid and as imperishable as the rock with which they are blended,"—among which we may mention pectines, chain-coral, madrepores, star-stone, millepores, branchy-alcyonite, bivalves, &c.

This range of limestone hills extends from Dudley in a north-westerly direction. It consists of oblong hills, of which the west sides, like those of most mountains, are steepest. The most conspicuous are Dudley Castle Hill, Wren's Nest Hill, and Sedgley Hill. This latter hill, or as it sometimes called Sedgley Beacon, consists of the upper part of the Silurian rocks, called the Ludlow Formation, which overlays the Dudley rock, and yields lime of a different quality to the former ones.

The summit of the Wren's Nest Hill is an extended flat, much of which is covered with growing wood. A steam-engine draws up the stone by two shafts, communicating with a middle and a lower working; and a small brick building covers the head of a spiral staircase of 240 steps, leading to the mines on that side, and descends to the level of the canal.

The entire scenery of this singular hill is in the highest degree interesting. Its rocky aspects resemble those of the Castle Hill, but are more extensively developed; and its verdant swells and its old workings, partially covered over with vegetation, present an end-

less variety of woodland and pastoral beauty—of wild desolation and of silent desertion—occupying the places which bear the marks of active occupation.

The ten-yard coal field extends from Bilston southward to the Lye, seven miles in length, of various breadth, on the average perhaps four miles, forming a tract of twenty-eight square miles. This bed of coal often proves twelve yards in thickness, and a roof is left in the mine sufficiently strong to bear, with props or pillars, the superincumbent weight of from 180 to 800 feet of various terene substances, which lie between it and the earth's surface. Beds of thinner coal, from four to eight feet in thickness, rise from the ten-yard coal. Drawing a line from Stourbridge, in the south, through Dudley, and across Cannock Chase, to Rugeley, in the north, the length of the coal field would be about twenty-two miles, and its greatest breadth, from east to west, something under nine miles. The carboniferous limestone, and the old red sandstone which underlies the coal basins of Somersetshire and Yorkshire, are here wanting.

At the period of the formation of the Silurian rocks, one universal ocean seemed to have encircled our planet from pole to pole; but while the coal rocks were in progress the scene had changed. Matted jungles and rich savannahs, abounding in gigantic mosses; colossal reeds, palms, bananas, and bamboos, with a climate hotter than the torrid zone; immense swamps, producing a luxuriance of vegetation unparalleled in after ages of the world; stagnant pools, choked up with aquatic plants, through which that powerful creature

the *megalichthys* could scarcely make its way; and on more elevated spots coniferous timber, with innumerable and graceful tree ferns, formed thick forests, the falling foliage of which enriched the rank soil. The dense steam from the mass of putrifying vegetation hung in such a deadly mist over the scene that no creature furnished with perfect lungs could live. A few years ago a fine specimen of that enormous fish the *megalichthys*, almost perfect, was found in the gubbin ironstone at Bentley, near Walsall, which came into the possession of Mr. Cooper, surgeon, of Bilston, who had it placed in the Dudley Museum. The head of this creature was more like that of a reptile than a fish. In the scales and form of the teeth it approached the crocodile family.

At Parkfield the bottom coal, which was at the depth of 126 yards at Millfields (a mile distant), came to the surface, and on removing the superincumbent beds of fire-clay, a most curious and interesting proof of the superabundant vegetation of the ancient world was disclosed; upwards of seventy carbonised trunks, standing thicker than the trees in any modern forest, being seen, the prostrate parts lying around in every direction, while lepidodendra, calamites, and other plants of the coal period, completely filled up the space between; and mingled with this mass of vegetation were found the teeth and bones of fishes, including the circular scales of the *megalichthys*. Some of the trunks were eight feet in circumference, and the prostrate limbs from fifteen to thirty feet in length; but the most curious circumstance was, that although the whole was

not more than twelve feet thick, there were three distinct beds of coal, on the surface of each of which they might see the remains of an ancient forest of large trees.

Another substance found in the coal-field is *clay-ironstone*, which is an oxide of iron joined to clay. This substance, which is exactly like rock, having no metallic appearance, after being extracted from the mine is submitted to the heat of the blast-furnace. It is necessary to add a sufficient quantity of some substance which has such a chemical affinity for the extraneous matter which is combined with the iron-stone as shall cause a union of the two, in the form of a semi-vitreous fluid, which hardens in cooling into a *slag* or *cinder*; while the iron, by its superior specific gravity, falls to the bottom of the furnace in which the fusion is effected, and is thus suffered to run off, comparatively free from impurities. The Staffordshire ore being of the kind called *argillaceous*, or having a base of clay. the *flux* used, as found by experience most readily to unite with the clay and thus liberate the iron, is *limestone*. A furnace will probably run out from three to four tons of iron in each turn of twelve hours. The ingredients to produce this quantity are about eight tons of burnt mine, twelve tons of coal reduced to *coke*, and four tons of limestone, nearly half of which is dissipated in the process, in the form of smoke, charged with sulphur, carbon, and other matter.

It is said that Crœsus, King of Lydia, was astounded when Solon declared that iron was a more valuable metal than gold. The Athenian philosopher, however,

spoke only of its utility in war, but his assertion would not have been less true if he spoke of its profit to the artizan, and its price when manufactured into various articles of ornamental design and fine cutlery.

By referring to the following passages of the sacred scriptures, it will be seen that the value of iron must have been known from the earliest ages :— *Gen.* xix, 28, *Exod.* xix. 18, 1 *Kings* viii. 51, *Isaiah* xliv. 12.

In contrasting the present state of the iron trade with its former condition, how different is the picture! Smelting furnaces were formerly built on the tops of hills, for the purpose of obtaining currents of air—until bellows were invented the operation depended upon the wind. A few years ago, comparatively speaking, charcoal alone was used as fuel for smelting the ore; and Dr. Plott informs us that the heat was urged to the required temperature by the strength or weight of the workman, through the means of "foot-blasts or treddles" acting on some kind of bellows. The quantity of wood consumed, in the form of charcoal, was enormous. The ore when raised was borne to the nearest woodlands, in order to have the benefit of the use of charcoal.

The persecuted Dud Dudley struck out a new era in the iron trade. Deploring the decay of the "mighty forests," and the consequent scarcity of charcoal, he was induced to attempt the substitution of mineral for vegetable carbon, by using coke instead of charcoal.— Animated by the result of his first trial, he proceeded to a second, when the feasibility of the scheme became apparent. For the use of this invention a patent was

obtained in 1622, which he put in force at Pensnet Furnace and Cradley Forge.

In the early part of our mining history, (as an intelligent writer observes,) with the exception of the widely-scattered furnaces and forges which were gradually consuming our forests, no manufacturing smoke obscured the sun greater than the light column which curled up from the hearth of the smith, the cutler, the loriner, or the nailer, whose occupations characterised the district. The clean and noiseless windlass sufficed for the raising of all the ore that could be piled in the panniers for the load of the horses employed in its transit, and of all the "sea-coal" required for domestic consumption, and for the partial use of the homely manufactures of the time. And when invention, urged by demand, was tasked to provide a mode of more rapidly procuring an increased quantity, as well as to clear away the water, which as the work proceeded along the opposing strata began to obstruct its progress, the creaking and more potent, but equally smokeless "gin," effected the purpose, revolving by means of the horse, pressed into the service as a mechanical power.

There are many lingerers still on the earth who well remember the long array of pack-horses, adorned with bells whose tinkling sounds enlivened the pathless woods, or gave warning of their approach when traversing the dark and narrow holloway. In those days, a furnace, a forge, or a rolling and slitting mill, was each singly a sufficient undertaking for an individual speculator. The furnace was generally of necessity

placed at a distance from the mine; hence the waters of the Stour were made subservient for the manipulations of the early branch of the iron trade. A small work located on this stream, near Hales-Owen, still bears the appellation of "The Furnace," iron being formerly smelted here. A stream was required with sufficient force to turn the wheel that should act upon the bellows, raise the hammer, or whirl the rollers. At length the power of steam worked a wonderful change. The profound talent of a Watt chained and tamed that power, exhibited its real capacity to the eye of an astonished world, put a hook into the nose of the leviathan, and harnessed the mighty beast to be ever the docile and obedient slave of man.

Mr. John Wilkinson first introduced the novel power of steam for procuring a continuous blast, at the Old Furnace at Bradley, in 1780, *using coke as fuel*, and soon after steam was brought into use as a mechanical power, both for the purpose of pumping water, and in raising coals. The circumstance of drawing up a weight without horses seemed altogether so incongruous that the apparatus first received the name of "sawney," and by other despisers of novelty "whimsey," which name it retains to the present day.

The vast consumption of coal for the manufacture of iron alone is prodigious. A single furnace, when in active operation, runs out weekly nearly fifty tons of metal, at a cost of about seven tons of coal to each ton of iron, or 350 tons per furnace per week, which multiplied by one hundred—at least the number of furnaces at the present time in blast in this neighbourhood—will

make the weekly consumption 35,000; and the latter quantity multiplied by fifty-two, will make the enormous total of 1,820,000 tons in a year, consumed in the smelting of iron alone. When we also take into account the enormous quantity consumed in the various forges and ironworks of the locality, with the countless loads sent off in boats to supply distant manufacturers, the mind is lost in astonishment in contemplating the apparently inexhaustible supply. And when we reflect that we have not only stones of iron, but coals to fuse, and lime to flux the stubborn ore, we cannot but admire the kind providence of the Great Architect of the Universe in thus depositing these materials so near to each other.

The basaltic hills of Rowley stretch from the south-east of Dudley to the parish of Hales-Owen, where they terminate, assuming the character of a lengthened range. There are others of a more isolated nature, which consist of a single point of elevation, as Netherton Hill and Barrow Hill. There are also several minor outbursts of this nature in the centre of the town of Dudley—amongst other places, on the lower portion of Constitution Hill, near to the Gas Works.

If our readers should have time or inclination to visit the extinct volcanoes of this neighbourhood, the pleasure they may receive will no doubt amply repay for the trouble. Had we space we should feel pleasure in describing these at greater length; but the following particulars, however brief, may probably prove interesting.

The basaltic mass called "The Hailstone" presents a bold feature on the south-west frontier of the Row-

ley range of hills. It consists of a vast cubical pillar, abutting against a lofty acclivity and assuming at a little distance the mimic semblance of castellated masonry. The rocks rear themselves in fantastic piles even to the clouds—enormous craggs and fissured precipices present a magnificent contour of solid durability;—here

Nature sits alone,
Majestic on her craggy throne.

Surrounding it on all sides,—scattered in great profusion through the coppice which spreads over the slope and strewed in multiform fragments at its base, —are also innumerable blocks of basalt. From the summit of the rock we may enjoy a panoramic scene of extraordinary beauty and variety.

The trap of Rowley differs in no respect from the nature of the lava ejected by modern volcanoes except that this substance was poured forth under great pressure, by which the gasses were able to expand, and give to the formation that vesicular structure by which lavas are more generally characterised. It consists of a dark bluish grey stone, which decomposes into a reddish powder. It is sometimes called *trap*, from its supposed resemblance to a ladder, which in the Swedish language this word signifies. This stone was annalized by Dr. Withering, who found that 1,000 parts of it contained 475 of siliceous earth, 325 of argillaceous earth, and 200 calx of iron. Specific Gravity, 2·86. Dr. Plott informs us that the magnetic property of these hills turned the needle six degrees from its proper direction.

The imprisoned lava forcing its way through dis-

ruptured fissures, and rising above the earth and then rapidly cooling, formed the great masses of basalt we have been noticing. Sometimes these beds of "green rock," as they are locally termed, lie at a considerable depth beneath the surface, extending themselves in numerous ramifications across the coal field: when this is the case it is called *a fault.*

The faults connected with the Rowley hills show that this flow of melted matter must have been accompanied with the most violent convulsions in the immediate neighbourhood, splitting the coal measures by enormous fissures running nearly parallel with the hills themselves. One of these great faults may be traced from the Fiery Holes through the Russell's Hall Colliery, Queen's Cross, and the Buffery Collieries, whence it passes onward to Gad's Green Reservoir, and then apparently takes a direction pointing towards the Black Heath Colliery. This fault, which at the Fiery Holes is a downthrow towards the south-west of only sixteen yards (the fault itself being about thirty-five yards broad) increases in magnitude, until, at the Brick House Pits, close to the Rowley Hills, it has attained a breadth of from two to three hundred yards, and causes a downfall in the measures of upwards of one hundred and fifty yards. There are also some other beds of "green rock," which branch off nearly at right angles with the line of the hills on the north-east. We may form some idea of the hindrance occasioned by these igneous rocks from the fact that *one guinea per inch* has been paid for sinking for coal in places where they occur.

Fire-clay is also found in various parts of the coal-field. This clay, when raised, after being left sometime to be acted on by the atmosphere, is tempered by beating it up with water, and moulded into bricks, suitable for lining furnaces, ovens, &c. The neighbourhood of Stourbridge abounding in this material, it is known in commerce by the name of Stourbridge clay. The common brick clay is also found in abundance, which in consequence of containing a greater portion of iron, burns red, and is remarkable as being nearly the same in its nature with basalt.

Extensive quarries of *new red sandstone* are to be found, especially in the neighbourhood of Hales-Owen, and most of the ancient churches in that vicinity are built with it. The great manufacturing town of Birmingham is situated on an undulating country composed of this material. Some idea may be formed of the elevated situation of this borough, by stating that the site of St. Philip's Church is about fifty feet higher than the top of the cross of St. Paul's Cathedral in London. It has been remarked that no great manufacturing town could flourish in a chalk down like Salisbury Plain, and that in England no less than thirty of the largest and most populous towns, from Exeter to Carlisle, are built like Birmingham on the new red sandstone. No one can dispute the fact, that it is to its position on this formation, and its consequent proximity to coal, that Birmingham has risen from a village of blacksmiths to a population of upwards of 182,000 souls.

HALES-OWEN: PRINTED BY WILLIAM HARRIS.

TABLE I.—BOTANY.

Plants growing on or near the Castle Hill.

Avena flavescens
Alchemilla vulgaris
Anemone nemorosa
Atropa belladonna
Avena elatior
Antirrhinum cymbalaria
Bromus erectus
Bromus asper
Colchicum autumnale
Carduus eriophorus
Chlora perfoliata
Conyza squorrosa
Conium masculatum
Cherianthus fruticulosus
Cnicus eriophorus
Echium vulgare
Erodium moschatum
Erigeron acris
Fraximus excelsior
Festuca duriuscula
Glyceria rigida
Geranium dissectum
Geranium moschatum
Hieracium sylvaticum
Linum catharticum
Lathræa squamaria
Lathyrus pratensis
Melica uniflora
Milissa calamintha
Orchis maculata
Paris quadrifolia
Poa nemoralis
Pimpinella saxifraga
Polygala vulgaris
Plantago media
Prenanthes muralis
Phalaris arundinacea
Reseda luteola
Rosa arvensis
Rosa canina
Rosa villosa
Ranunculus sceleratus
Sagina apetala
Solanum dulcamara
Sedum acre
Solidago virgaurea
Thymus serpyllum
Thymus calamintha.

TABLE II.—ORNITHOLOGY.

Appertaining to the Castle Hill.

Ampelis garulus
Arlanda arvensis
Arlanda pratensis
Corvus corax
Corvus frugilegus
Corvus pica
Corvus glandarius
Emberiza miliaria
Falco milvas
Falco nisus
Fringilla montana
Fringilla cœlebs
Fringilla carduelis
Fringilla linaria
Loxia coccothraustes
Loxia chloris
Loxia citrinella
Matacilla alba
Matacilla boarula
Matacilla flava
Matacilla rubecola
Matacilla modularis
Matacilla atricapilla
Matacilla trichilus
Matacilla regulus
Parus major
Parus cœruleus
Parus ater
Phasianus colchicas
Phasianus perdix
Strix flammea
Strix stridula
Turtus torguatus
Turtus merula
Turtus viscivorus
Turtus pilaris
Turtus musicus
Turtus iliacus

BIRDS WHICH ONLY APPEAR DURING SUMMER.

Lanius collurio
Cuculus canorus
Iynx torquilla
Motacilla luscinia
Motacilla phænicurus
Motacilla sylva
Motacilla ænantch
Motacilla parbetra

TABLE III.—ENTOMOLOGY.

Classified according to Samouelle

Alucita hexadactylla	Pygæna bucephala
Arctia menthrastra	Noctua egens
Arctia iurbicipeda	Putris
Arctia caja	Oculea
Pyralis farinalis	Lucipara
Geometra ocellaria	Gothica
Chenopodaria	Chrystitis
Bilineata	Exclamationis
Didymaria	Pallens
Ocellata	Gomma and Iota
Pusaria	Bractes
Nemoralis	Pisa
Cretægaria	Polyodon
Fluctuata	Lythoxylia
Subtristata	Meticulosa
Grosubaniata	Oleracia
Repandaria	Conigera
Dubitata	Typica
Dilutata	Libratrix
Hepiolus Humuli	Subsequa

The beetle tribe is very abundant, especially the *scarabæus nasciornis*, or rhinoceros, an insect very destructive to old ash trees. The *lucanus*, or small stag, is also found here, but not frequently.

TABLE IV.—GEOLOGY.

ZOOPHYTA.

Cellepora favosa	Ceriopora granulosa
Ceriopora affinis	Ceriopora oculata
Ceriopora punctata	Glauconome distieha

Calamapora spongites.

Some of the genera of corals found in these rocks are the principal architects of coral reefs.

RADIARIA.

Actinocrinites moniliformis	Cyathocrinites tuberculatus
Actinocrinites triacontadactylus	Platycrinites pentangularis

Rhodocrinites verus

Of the family of *crinoidea*, or lily-shaped animals, one species only is now known to exist.

CONCHIFERA.

Spirifer lineatus	Terebratula affinis
Delthyris cardiosperm.	Producta depressa.

MOLLUSCA.

Euomphalus catillus	Euomphalus funatus

CRUSTACEA.

Calymene blumenbachii	Calymene variolaris
Calymene macropthalma	Asaphus cordigerus

Asaphus caudatus.

PISCES.—Icthyodorulites.

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