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MINERALS.

More Parricularly

Of such as are found in the COAL-MINES of GREAT BRITAIN.

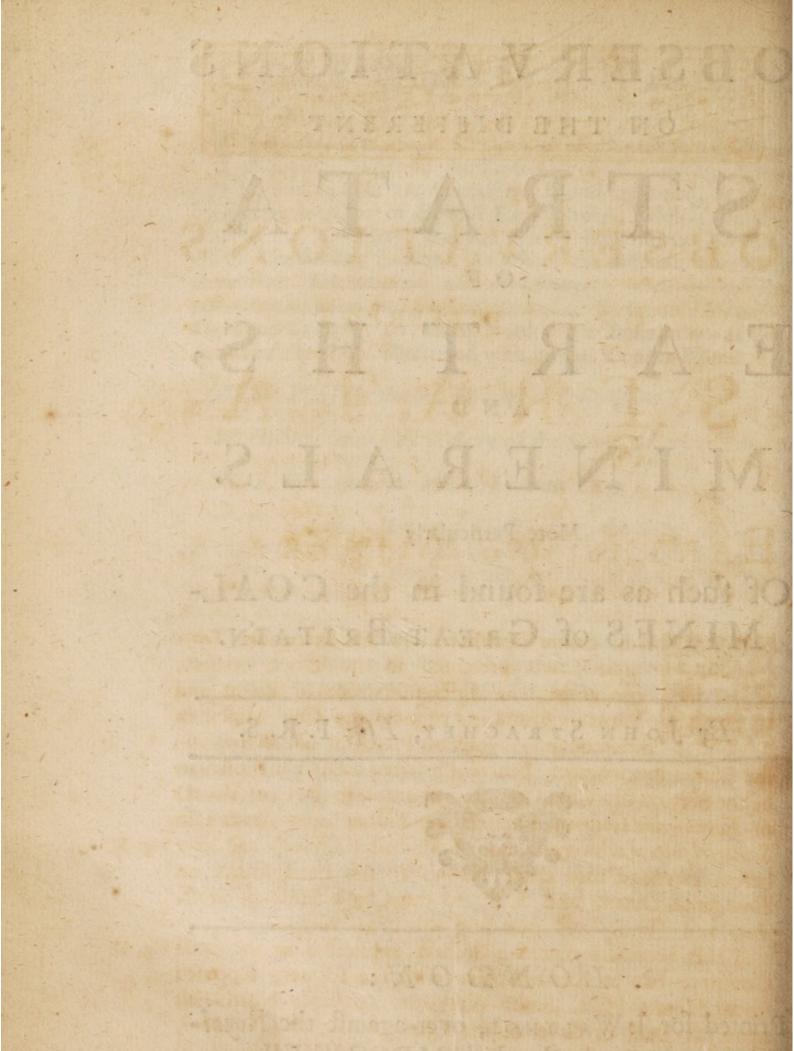
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OBSERVATIONS

ON THE DIFFERENT

STRATA

OF

EARTHS and MINERALS.

HE following Sheets are grounded on Two little Tracts presented to the Royal Society, concerning the different Strata of Earths and Minerals found in, or near the Coal Mines, in different and very distant Places of Great-Britain;

for Illustration whereof, I therein inserted a Drast supposed to be the Section of a Coal Country, applicable to the Coal Works of Farringdon Gourney, and Bishop Sutton near Stowey in Somersetshire (which are about Four Miles distant) and have Fig. I. herein extended that Drast N. W. to the Lead Mines on Broadwell-Down, and S. E. to the Chalk Hills of Wilt-shire and Dorsetshire, including above 20 Miles.

THE Second Figure is a Section applicable to the same Fig. II. Country, but at Right Angles with the former, supposed from Mendip Hills, South-West, to Cotswold North-East

upon the Drift or Level of the Coal.

SIR Robert Atkins, in his History of Gloucestershire, assumes, " That if a Line was drawn from the Mouth of " the Severn to Newcastle, and so round the Terraqueous "Globe, Coal would be found near that Line, and scarce " any where out of it." 'Twere to be wished he had given some determinate Breadth to that Line; for taking it to be 120 Miles broad, it runs Northward through the Ocean, and takes in only a little of Norway and Greenland, where I question, if Coal is discovered, and Southward this Line would touch none of the known World; whereas Coal is found in France, in Ireland, and some Parts of Germany, particularly the Bishoprick of Liege, which will be excluded from this Line: yet I agree, that draw a Line, or rather a Segment, from Lye under Mendip in Somerset shire, through Bath to Sunderland on the Sea Coast in Durham, so that Warwicksbire (which would be without the Strait Line) might be included in the Bow or Middle of this Segment, and another parallel with it from Tenby in Wales, to Baldoe West from Falkirk in Scotland, these two parallel Segments being about 110 Miles in Breadth, and 300 in Length, and bearing North and by East, and South and by West, will include all the Coal hitherto found in Great-Britain, and excepting the Collyeries of Warwickshire, which break out to the Southward, and confift of Free Coal, the Northern-Part of this Line will be found to be Free Coal, or that which burns to a white Ash, as all the Welfb, and almost all the Scots Coal does; the other, or Southerly Line, will be of the Caking Sort, such as is the Somerset, Choucester, and Newcastle Coal; I will therefore call this the Coal-Plan. And let this Plan be still farther extended South-West, it will include not only the Lead Mines on Mendip Hills, and Broadewell Down, which crosses and bounds the Coal Country on that End, but also the Copper Mines of that County, and Devon, and Tin-Mines of Cornwall; and carry the same Lines Northward beyond Tay, (which bounds the Coal Country at the North End) it will take in the Lead and Copper found in the Highlands of Scotland. Now as this Coal Country is at both Ends bounded by Hills of

Lead,

Lead, so it is likewise traversed and intercepted by such Lead Hills in several Places, and these always lying higher than the Coal; for Instance, the Coal in Pembrokeshire and Carnarven is cut off from that in Flintshire by the Lead Mines in the Mountains; The Mountains of Derby and Westmoreland, abounding in Lead, intercept the Coal on both Sides; the Lead again in Crawford-Moor traverses the Coal, and that in Fife and the Highlands crosses and bounds it on the North.

FOR Discovery of Coal in any Place, they first search the Gullets, Dens, and hollow Ways, if they can find any Appearance of Smut, Cliff, or real Coal, which sometimes appears to the Day in Sides or Bottoms of fuch Banks or Gullets where the Earth has been worn or washed away by the Land Floods, which Appearance of Coal in Somersetsbire is called the Crop, is many times real Coal, but very weak and friable towards the Surface, yet grows harder and better the deeper it lies; Or if they find the Coal Cliffs only, they are fure there is Coal under them, tho' many times it may not prove worth the Working: These Coal-Cliffs or Clives are, in most Parts of Somerset shire, toward the Surface, soft and reddish as is the Mould over them; but as they fink deeper, the Workmen find them grow harder and darker, even to an hard Rock, and blackness of Coal itself, but not inflammable: They lie in Beds, and keep the same Courses as the Coal keeps, which lies under them; for all Coal lies shelving like the Tyles of an House, never Horizontal like Stones in a Quarry, nor perpendicular, unless broken by a Ridge which is a Parting of Clay, Stone, or Rubble, as if the Veins of Coal or Metal were broken in two by some violent Shock, and Earth, Rubble, &c. fallen in between. This Obliquity the Collyers in Somersetshire call the Pitch, and is generally about 22 Inches in a Fathom, and when it rifes to reach the Land, is then called the Crop, in the North Baffeting. In the Works near Stowy, Farringdon, and some other Places, it rifes to the North-West, and pitches to the South-East, but traps up to the South-West, and down to the North-East; consequently the Drift or Level is to the South-West and North East; but the farther they work to the SouthSouth-West, the Level winds about Westerly, and the more

they work to the North East, it bends more Northerly.

CONSONANT to which, in the General Course from Somerset to Newcastle, the Medium or common Drift will te found to be North-East by North, and South-West by South, but as this Line must make a Segment to include Warwicksbire, which is near the Middle of its Length, the general Drift to the South of Warwicksbire will be found to wind about almost South South West; so on the Northern Part, 'twill be almost North and South.

AS for the Particulars within my Knowledge or from

good Authority;

	At Baldoe and Madeston, the Dip? to S. E. is 5 At Tranent, S. S. E	I Foot in 20 Feet.
	At Auchinclough At Widrington, S. E	I ——03 I ——20
	Burnett and Birsteton pitch North Stowey, Littleton, and Farringdon to S. E	11 Inches in 3 Feet.
	At Ditto, another Vein, to N. E. by E.	II 3 II 3
P. 128.	Doctor Plott says, that at Wednes- bury and Hardings-Wood, and, generally speaking, in Stafford- shire, the Dip is, East From	r Fath. in 3, to r in 5.
	Though it frequently alters its Bearing by a Leap, and likewise its Dip, as at Bidulph it is almost perpendicular, and in other Places, at Cheddle in Staffordshire, the Dip is S. E. by S	I Fath, in 10.

Coal is generally dug in Valleys or Low Grounds, the Surface whereof at Sutton, Farringdon, Littleton, &c. is mostly a red Soil, which under the first or second Spitt degenerates into Malm, or Loom (which sometimes yields a Rock of red Firestone) 'till they come to 4, 5, and often to 10 or 12 Fathom deep, when by Degrees it changes to a grey Millstone of 18 Inches or 2 Foot thick, and then to the Coal Clives, first reddish and soft, then to more dusky, hard, and black Rocks, which are distinguished by their lying in Beds obliquely, as I said before. But in the foresaid Somersetsshire Works, they never meet with Freestone as in the Works at Newcastle, Scotland, Staffordshire, and Lancasshire. Sometimes these Clives prove extream hard, so as to be blown up with Gunpowder, and the harder these prove, the Coal is commonly the better under them, for where-ever they find these Clives, they are sure to find Coal, though sometimes not worth working; for if they continue soft or reddish, the Coal is so likewise.

THE first or uppermost Vein at Sutton, is called the Stinking Vein; It is hard Coal and good for Mechanicks, but of a strong sulphureous Smell. Under this Vein, generally about 5 Fathom and a half, seldom more than 7 Fathom, lies another, which from certain Lumps of stony Substance (like a Caput Mortuum) mixed with it, they call the Cat-head Vein; though these Cats look like the other Coal, yet they lie in the Fire without burning. Under this latter Vein, 5 or 6 Fathom deeper, lies the Three-Coal-Vein, so called, because it's divided into three different Partings, each about a Foot thick; the Parting between the uppermost and middle Coal of this Three-Coal-Vein, is a Rock of one Foot, and, in some Places, two Foot thick; but the middle, and third Coal of this Vein lie like two Stones one on the other, loose, without any Separation of a different Substance.

THESE three Veins before-mentioned, viz. The Stinking, The Cat-head, and the Three Coal-Vein, are sometimes dug in the same Pit; but the next Vein which I am going to mention, is generally wrought in a separate Pit; for the it lies the like Depth under the other, yet the Cliff between them is not only very hard, but subject to much Water; wherefore I have represented a Pit dug through the Three sirst Veins at A, another to the Three-Coal-Vein at B, and

B

so if they fink on any of the lower Veins, they go more to the North-West: Next, under this, is the Peau Vein, so denominated, because it is figured with Eyes, resembling those in a Peacock's Tail, which Bird, in Somerset shire Dialest, is called a Peaw. The Cliff lying between the former Vein, and this, is variegated with Cockle Shells and Fern Branches, and where they find these Variegations in the Cliff, 'tis a certain Indication that they are coming to this Vein which is searched after about 15 Fathom to the North-West of the former; under this, and between five and fix Fathom lower, lies the Smith Coal Vein, about a Yard thick, and under that, about the same Depth lower, is the Shelly-Vein, and as much lower again, lies a Vein of Ten Inches, which being little valued, I can give little Account of; and some say there is another under this again, but it has not been wrought in the Memory of Man. At Farringdon they have the same Veins with the foregoing, and, as I am informed, agree in every Part; but as this is distant four Miles South-East, from those at Bishop-Sutton, so in their regular Course they would lie a Mile and one third deeper than those at Sutton, but they appear to be near the same Depth, and therefore there must be a Trap up, of a Mile and one third between the two Works. Between Farringdon and Littleton they keep their regular Course, but at Littleton the deepest Vein is the best Coal, and is about a Yard thick, though the same proves small at Farringdon, which is but a Mile asunder.

NOW between these Works there are Hills, the Tops whereof are a stony-arable, mixed with a spungy Earth and Clay, which being removed, there are Quarries of White Lyas of different Strata, or Beds, which keep a regular Course to about 10 or 12 Feet in Depth; then a Clay, and regularly at four Fathom under the lowest Bed of Lyas is found a Blue Marle about a Yard thick, then an insipid Earth of the same Thickness, under which lies a black Marle fatter than the former, and under that a spungy yellowish Earth; all this lies above the Red Soil, which, I said, is generally on the Surface of the Valleys, in which the Coal dug

in these Parts is found; and as this red Soil on the Surface degenerates into Malm or Loom underneath, so towards the North-West, beyond or without the Veins of Coal, viz. about Windford in the same County, it turns to Ruddle, or Red-Okre, used chiefly for marking Sheep, or for Ground Colours, or for Priming instead of Spanish Brown, and often counterseits Bole Armon.

ON the other Hand, in Stanton Parish, about a Mile to the N. E. of the Coal-Works at Sutton, and in the same Course with them, they have found the same Veins; but there they dip full East, and consequently their Drift or Level is North and South, which the Workmen attribute to Ridges which they meet with on both Sides, and which hath occasioned them to discontinue the Work that Way.

AT this last Place, they have little or none of the red Earth or Malm towards the Surface, but come quickly to a Sort of Iron Gritt, or Grey-Tyle-Stone, which is the Forerunner of the Black or Coal Clives: In other Things it

agrees with the Works at Stowey.

IN the same Parish of Stanton-Drew, but a little remote from the former to the Eastward, they have another Work very different from the former. The Course of these Veins is to the Eleven-a-Clock Sun (as they term it) they rise to the Five a-Clock Asternoon, and pitch to the Deep, to the Five-a-Clock Morning; they work only Three Veins, though there are more; the first or uppermost is about 3 feet thick, small Lime-Coal. Three Fathom under this, lies a Vein 2 Feet and a half thick, hard Coal, sit for Culinary Uses. which they call the Great Vein, in respect to a lesser, lying about the same Depth under it, which is but 10 Inches thick, though good hard Coal.

AT Clutton, which is two Miles South from hence, in the same Drift with these last mentioned, they appear again; the Surface is Red Malm in some Places, to 12 and 14 Fathom, then Coal Clives for 5 or 6 Fathom, and in other

Things agree with the former.

they have 4 Veins, which pitch North; (here also they have Red Malm, 4 or 5 Fathom); 1st. The uppermost or Whippy Vein is from 3 to 6 Feet thick; 2d. The Pot-Vein, 6 Fathom under the former, 18 Inches thick, all hard Coal; 3dly. The French Vein, 7 Fathom under the other, from 2 Feet and a half, to 3 Feet thick, all solid Coal. 4thly, The Rock Vein always distinguished by a Rock of Paving-Stone, or Penant lying over it, which Rock lies in Strata of grey Slate, or Paving-Stone, sometimes 20 Feet thick; this Vein therefore is never wrought in the same Pit with the former, but about 200 Yards more to the Land it's computed 7 Fathom under the former.

ALL the Works before mentioned agree in the oblique Situation of the Coal, and of the Cliff, which lies over the respective Veins, (all pitching about 22 Inches in 6 Feet) and in the different Strata of Earths found over the respective Veins; but they differ in respect to their Course, Level, or

Drift, as also in Thickness, Goodness, and Use.

AT Naylfy, Publoe, Cumpton-Dandoe, Houndstreet in Chelworth, Paulton, Timbersbury, Welton, Childeompton, Midsummer-Norton, Stratton, Kilmerston, Holcolm, Folkland, Stoke-lane, and Leigh, under Mendip, are Coal-Works, of which I want sufficient Information.

BUT as I never heard any Coal was found either West-ward or Southward of Mendip Hills, so the Chalk Hills of Marlborough Downs and Salisbury Plains, seem to set Bounds to the Coal Country on the East and South East, of which I have supposed Fig. II. a Section from South West to North-East.

ALL these Somersetshire Coal Mines differ from the Staffordshire, Lancashire, Derby, and Scotch Works in one Particular; for there is no Freestone lying over the Coal in any of these Pits; on the contrary, the Freestone Quarries on Dundrey Hills, intercept the Works of Naylsy, Bedminster, Bresteon, Queen-Charleton, and Burnett, from those at Stanton, Clutton, Farringdon, Littleton, Sutton; and so does Oddown, and the other Freestone Hills about Bath, seem to

other before-mentioned Somerset shire Works, and those of

Gloucester Shire.

I have had Opportunity also of being under Ground, and viewing several Coal Works in Scotland and Northumberland at the Northern End of it, and to observe the several Strata there.

AT Widrington in Northumberland, they have 4 Fathom Clay, then a Seam of Coal about 6 Inches thick, not worth working, then a white Freestone, then a hard Stone, which they call a Whin, then 2 Fathom of Clay, then a white, foft Stone, and under that a Vein of Coal 3 Feet 9 Inches thick. This is a small Coal of the same Nature, but not so good, as the Newcastle Coal which comes to London Market. These Veins dip to the South East one Yard in 20. Near Tranent in East. Lothian in Scotland, the Coal dips also to the South-East in the same Proportion; But at Baldoe, in the Parish of Camply, Three Miles from Killyth, it dips to the N. E.; and at Madestone near Falkirk, to the same Point, and in the same Proportion: The Strata of Earths and Minerals at these Places, agree very near; they have, as the Ground rises or falls, 1, 2, or 3 Fathom of Clay, then 11 Fathom of Sclate or Coal Clives, one Fathom Limestone, under that 2 Fathom Sclate, Earth and Stone, and then Coal; and all these agree in this, that the Pits generally need no Timber, and have a good Roof, which is supported by Pillars of Coal which they leave in the Working. At Baldoe the Coal is commonly 45 Inches thick, and all along for some Miles Eastward thence on the Sides of the Hills are Crops of Coal and Limestone, and oftentimes the Tenants spit up as much as will serve their Turn for a Winter's Burning, just under the Surface, for there wants a Market, and it is scarce worth working for Sale: And to the N. W. and N. in the Drift of the Coal in higher Ground, and consequently lying over it, there appear in the Sides of the Hills, Seams of Sparr and Lead, the Drift of which is N. E. and lies almost perpenpendicular; but what Obliquity there is, pitches to the South-

AT Auchinclough, six Miles East from Kilsyth, there is a Coal 18 Feet thick; this dips one Foot in three, and is not pursued by reason of Water, and for want of a Market will not quit the Cost of draining.

AT Madestone, the Coal is 4 Feet and a half thick, about 3 Fathom and a half deep; they land it (as at many Coal

Hughs in the Country) on Girls Backs by Ladders.

NEAR Tranent, three different Veins of Free Coal have been wrought, the uppermost, being soft and tender, has been neglected, though it is, as I have been told, 4 Feet thick.

THE Main Coal is the uppermost now wrought, about 18 or 20 Fathom below the Surface; it's 7 and a half, 8, 9. and in one Place I measured it 10 Feet thick; it comes out very large. They bench or undermine it in Working, and drive it out with Wedges in great Clefts. The Floor, as well as the Roof of this, is of Freestone. In this Work I walked for two Hours forward and backward, between square Pillars of Coal lest to support the Roof. Ten Fathom under this, is the Splenty Coal, sometimes called the 5 Feet Seam, though 'tis seldom above 4 Feet and a half thick. It's an hard, but not so large a Coal as the other, and makes a clear and stronger Fire. These dip to the S. S. W. and crop out to the N. E. of Tranent. Near their Crop, two other Veins have fince been tried of Caking Coal, the Uppermost is to Yards under the 5 Feet Vein, the Undermost is 3 Feet thick, 7 Yards below the last mentioned, and dips a little more Southward, and is harder, and more cakeing than the former, but not altogether so firm as the-Newcastle Coal.

THESE Works, like those in Somerset, have their Traps and Ridges which they here call Hitches and Troubles.

THESE are all the Observations I have made at the two Extreams of this Coal-Plane. As to the Coal found toward the middle Part of it, Leigh, speaking of the Works in Lancashire, denies the Strata there, to lie according to the

Laws

Laws of Gravitation: He says, the First is Marl, Second Freestone, then Iron Stone, then Kennel, then some other Strata, then Coal again.

In the Philosophical Transactions, Mr. Bellars gives you an Account of the Strata at Dudly in Staffordshire, which

is inserted in the following Scheme.

Dr. Plott tells us, That the Cannel Coal is of so close a Texture, that the Choir of the Cathedral at Litchfield is paved with it, and Alabaster-Lozangy; that they turn Saltsellers, Standishes, Candlesticks, &c. in it.

IN the Lord Paget's Park, of Beaudefart, is dug of this Coal, which he thinks is so called from the British, Canwyl, a Candle, and that from Cam, Candida, and Gwyll, Tenebra.

Common Coal at Wednesbury, Dudley and Sedgley in Staffordshire, burns to a white Ash, leaving no Cinders, and

therein resembles the Scots Coal.

THE Peacock Coal at Henly-Green near Newcastle-under-Line, does not exceed other Pits in Hardness: It is divided into Plates about one fourth of an Inch thick; this differs from the Somersetshire Vein, which they call by the same Name; for the last mentioned Coal cakes, and produces hard Cinders, but resembles it in its changeable Colour.

AT Etingal in Sedgley, the uppermost Beds of Coal are 14 Yards thick above the Iron-stone. After the Soil or Arable, Gravel and Sand are taken off; all the Bass Free-stone, of what Sort soever, Clunks, Bats and Partings, keep a regular Course one above another. One Work there is at Biddulph, which dips almost perpendicular, in others the Dip is about 1 Foot in 10, as at Wednesbury. In the 3d or most Common Sort of Coal, the Dip is 1 Foot in 3, or 1 in 5.

AT Footerill in Apidale they drive in upon the Level; it frequently alters its Dip or Crop by a Leap, which is the

same as they call a Trap in Somerset shire.

AT Harding's - Wood about Newcastle, and, generally speaking, the Row, lying N. and S. draws nearer together Northward, and spreads to the South; it dips there East, and rises West, but at Cheddle the Dip is S. W. by S. or to the 2-a-Clock

a Clock Sun. The Roof of the Coal here is generally Freestone, and the Floor, Earth, or Iron-Stone.

ALL these different Strata, as found in any of those Places I have observed myself, or met with from others, I have at one View represented in a former scheme, and Fig. 1, 2. which I have before described on a supposed Plane. I here Fig.3. likewise have protracted in a globular Projection, supposing the Mass of the terraqueous Globe, to consist of the foregoing, or perhaps of ten thousand other different Minerals, all originally, whilst in a lost or fluid State, tending towards the Centre; it mechanically, and almost necessarily follows, by the continual Revolution of the Crude Mais from West to East, like the Winding up of a Jack, or rolling up the Leaves of a Paper Book, that every one of these Strata (tho' they each reach the Centre) must, in some Place or other, appear to the Day, in which Case there needs no Specifick Gravitation to cause the lightest to be uppermost, &c. for every one in its Turn, in some Place of the Globe or other, will appear near the Surface; and were it practicable to fink a Pit to the Centre of the Earth, all the Strata that are, would be found in that Pit, and, according to the Poet, Ponderibus librata suis. Add to this, that in all Places

ly.

Dr. Stuke- within my Knowledge, the Observation of another Member of the Society has held good, that the Precipices of almost all Hills are to the Westward, whereas the Ascent to the East is more gradual. The farther Enquiry into which, I offer to the Curious, who have better Opportunity; and I only hint farther, to fuch as have an Astronomical Genius, that possibly the Motion of the Earth may receive some Confirmation from the fore mentioned Situation of the Strata of Coal and other Minerals, and especially if found uniform in different Parts of the Earth; for if the foresaid Position of the several Strata and Ascents of Hills, is mechanically accounted for, by the supposed Motion of the Earth from West to East, whilst the Earth was soft and tender; the said Motion of the Earth is reciprocally the necessary Result of all these Facts, and is therefore itself an undoubted Fact; but this is an Hint of fuch Importance, as to deserve a more exact Research.

The second second			The second secon
by Mr. Bellers) the Dip is Fast, but at Cheddle, the	At Wednesbury, as by Dr. Plott the general Dip is E. but at fome Places S. E.	Dr. Leigh fays the Strata in Lancashire lie thus.	At Amblecott,
Dip is S. E. by S.	and by S.	The state of the s	
Yellowish Clay 4 Bluish fost Clay 5	Earth and Stone	1 Marle. 2 Freeftone.	Top Earth 21 Rock 42
Bluish hard Clay, or Clemch with Mine- tal Plants, which is a fore Sign of Coal	Blue Clunch, or white, in the West is called Clives.	3 Iron Stone. 4 Kennell Mine. 5 Rubble and other Strata.	Blue Clunch 9
Blue foft Clay 9 Fine grained grey Stone, found only 4	He does not take Notice of the intermediate Strata.	6 Coal.	Cath. Earth mixed with wild Iron Ore, which
in fome Pits - 3 6 Light blue Clay 21 7 Hard grey Rock 2 with imperfect >75	Note also, between every of the flores of Coal is a Batt or Subflance between	Plott at Dudly, from the Metalla Martis of — Dudly, Efq; after the 3 uppermost, or	lies upon the Coal.
Vegetables 3 Blue Clunch, as N° 3. 5 Dunrow Batt, a black	Coal and Earth, black like Marle.	white Measures.	
Substance. 10 Bench-Coal 3	Coal the Top Floor 4	Shoulder Coal.	WhiteCoal, or topCoal.
black and finning 3	Over Slipper Floor 2	Toe Coal.	Heath or tough-Coal.
black 5 4	Grey Floor 2		
Between every Strata of Coalina Batt of the thick- ness of ball a Crown.		Foot Coal. Yard Coal. Slipper Coal.	Fine Coal or Sea Coal. The Veins. Long Coal.
13 Stone Coal 14 Dunrow Batt 1	Lamb Floor 2 Kitt Floor 1	Sawyers Coal.	Rough Coal. Spin Coal.
Some or grey Iron Ore } 1	Bench Floor 2 1	making roYards thick. Several Measures of	Top of Suder Height. Bottom Bench
ed White Row (in which the following Iron Ore lies)	Spring Floor	Iron Stone. Coal again 2 Yards thick	Back Stone. Iron Stone 3 Yards with Earth and all.
17 Hard, black, Iron Ore in Nodules, having whitiff Substance between them - 15	Batt from 1 to 3 Yards thick, to the neither	called the Heathen	Heathen Coal.
13 Midrow Grains hard grey Iron Ore with white Spots	Coal, viz. Slip-floor 1 Lamb Floor 2	Succeeding Strata at Dudley in Staffordfhire.	Plott fays, under the 10 Yards thickness of Coal, and above the Heathen-Coal are Iron Ores.
19 Gumlin Batt, a fiffile and black Substance 2	Oary Floor 1 Blench Floor 1	Feet. 26 Foot-Coal-Courfe 1 27 Abritle fhining Batt 6 23 Heathen Coal 6	r Black Row Grains.
20 D°. Iron Stone being hard, black- ifh Iron Ore with white Spots	Spring Floor 2 Shipper Floor 2	29 A Bat very near to Coal, but will not burn.	2. Dunrow Grains. 3. White-row Grains, fo called from the Earth of
21 The fame with \ in. No. 19 \ 18 22 Canoc hard grey Iron Ore \ 6	Earth	Bat 6 Inches. 31 a Coal not generally work'd.	those Colours, in which they lie. 4 The Rider-Stone. Clowd-Stone.
23 A Batt, as N°. 2 19, and 21) - 5 24 RubbleIronOre 2	Batt 1 Omfry Floor 2	In all 36 Fathom, or	6 Cannoc-Stone.
dark Grey 5 o 25 Table Batt 2 Then Floors of Coal a-	Iron-ftone	The best Cannell Coal i	n the Park of Beaudefart

At Sutton and Faringdon in Somerfetshire, from my own Observation, the Dip is S. E.		At Traneut inScotland, from my own Observation, the Dip it S. E. 1 Yard in 20.	At Baldoe and Madeftone in Scotland, the Dip is N.E.
Blue Clay 3 Lighter Blue Loom 3 Deep blue Malm foft and foapy. 3	White Freeftone. Whin or hard Stone White, foft Stone Coal.	Freestone 4f. Main Coal 9 or 10 f. Mettals or Cliff 60 f. Splenty Coal 4f. 6	Clay from 6 to 18 Slate or Clives 66 f. Lime Stone Slate and Coal 12 f. Coal 4 f. 6 Strata mentioned in the
Deep blue Marl RedEarth & Malm 60 Red Fireftone 2 Grey Millftone 2 or 3 Coal Clives 35	and Brilleton in So- merfetthire. Red Earth from 10 to 30 Fathom.	Drift is to 11 a Clock Sun. Little Red Earth Clives 18 f.	I have also observed at Harwich Cliff.
Coal the Stinking Vein 1 f. 8 \$20 Clives and Dung 42 f. Cathead Vein 2 f. 6 Dung and Clives 42 f. Three Coal Vein 3 f. Hard Cliff with }	Pot Vein hard Coal 1 f.6 Clives or Cliff 36 f.	Clives 18 f. Hard Coal, as at Sutton - Inches 10 Another Work there the Dip is full Eaft after the Red.	Stones with Sticks and Shells flicking in them. f. Clay If. In all about 50 f.
Cokles and Fern 48 Branches - f. Peau Vein with 2 Peacocks Eyes f. Cliff 33f. Smiths Coal 3f.	to 3 Feet thick. Rock of Penant, being Strata of	Coal Clives.	AtWatfordGap inWar- wickfhire, per Dr. Stukely. Marle, &c. 6f. Soft Rock.
Shelly Vein 2 f. 6	Rock Vein of Coal		Bed of Clay. Hard blue Stone. Springy and Boggy.

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