A

## DESCRIPTIVE CATALOGUE

OF THE

# GEOLOGICAL, MINING, AND METALLURGICAL MODELS

IN THE

## MUSEUM OF PRACTICAL GEOLOGY.

BY

#### HILARY BAUERMAN, F.G.S.

(ASSOCIATE OF THE ROYAL SCHOOL OF MINES.)



#### LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTFISWOODE,
PEINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

1865.

Price 2s. 6d.

#### NOTICE.

The Museum is onen gratuitously to the public every day in vacation

SCIENCE ach year, vered:—

LIBRARY OF THE

GEOLOGICAL SURVEY OF SCOTLAND.

Press. Shelf. S.

..., F.R.S.

Iofmann, a of Dr.

A Prospectus and Information may be obtained on application to Trenham Reeks, Registrar,

Jermyn Street, London, S.W.

### DESCRIPTIVE CATALOGUE

OF THE

# GEOLOGICAL, MINING, AND METALLURGICAL MODELS

-xx bients of in the li in the all end of collect of a

### MUSEUM OF PRACTICAL GEOLOGY.

systematic order bos bicardor Manualaya

smoot in the Museum at has been lound

#### HILARY BAUERMAN, F.G.S.

(ASSOCIATE OF THE ROYAL SCHOOL OF MINES.)



#### LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

1865.

Price 2s. 6d.

10484.

# NOTICE

In issuing this Descriptive Catalogue of the Geological, Mining, and Metallurgical Models in the Museum of Practical Geology, I gladly express the opinion that the work is highly creditable to the skill of Mr. Bauerman.

The visitor to the Museum will find in it a lucid explanation of the models illustrative of the Sciences of Geology, Mining, and Metallurgy.

The models being distributed according to the available spaces in the Museum, it has been found impossible to notice them in the order in which they are placed. A systematic order has therefore been adopted, and the heads of this arrangement are set forth in the opposite table of contents. The second and more detailed list, contains the name of each model according to its position in the Museum.

RODERICK I. MURCHISON,

Director.

Museum of Practical Geology, Jermyn Street, March 29th, 1865.

#### CONTENTS.

TABLE OF CONTENTS CLASSIFIED ACCORDING TO THE POSITION OF THE MODELS IN THE MUSEUM.

Volcanoes of Agreeuns - v - 14	0017	1	Page.
Models illustrative of Geological Phenomena - ~		-	3
Mining Tools	-	-	18
FUSES AND CARTRIDGES		-	46
Boring Machinery	1	io fo	48
LAMPS, LANTERNS, AND SAFETY LAMPS		ir	52
SURVEYING INSTRUMENTS AND ANEMOMETERS	-	-	63
TIMBERING AND MASONRY	-	41-	64
Drawing Machinery			70
PIT FRAMES, CAGES, CATCHES, AND GUIDES	-	0.7	80
Ropes and Chains		15	90
CRANES, HOISTS, AND DROPS	-	-	94
Models of the Workings of Collieries		15	95
" , SALT MINES -	-	-	102
", Pumping Engines	-	11-	106
,, DETAILS OF PUMPING MACHINERY		12-	114
,, MAN ENGINES	-	***	120
" VENTILATING MACHINERY AND FURNACES -	-	-	124
" Crushing Machines		-	132
, STAMPING MACHINES -	200		134
" SIZING MACHINERY		9 333	140
" SEPARATING MACHINES	-	-	144
GENERAL MODELS OF MINES		-	167
METALLURGICAL-MODELS	2-3	0 (5)	173

Undereliff, Isle of Wight -

# TABLE OF CONTENTS CLASSIFIED ACCORDING TO POSITION.

#### PRINCIPAL FLOOR.

#### HEAD OF STAIRCASE.

									1	age.
Model o	f the Volcanoes of Auvergne -		-				-		-	14
	Left-hand	LI	VE.							
Model o	f the Island of Arran -	-				-		-	-	15
21 ,,	Pass of Mont Cenis -		-		-		-		-	12
81 ,,	Alps and Plain of Lombardy	-		-		-			-	13
,,	Newcastle Coal Pit		-		0.		-		-	78
"	Cages at Cowdon Colliery	-20		-				-	-	80
,,	South Wales Coal Drops -		-		-		-		-	94
"	Holmbush Mine -	-		-		-			-	172
"	Landslip near Axmouth -		-		-		-		-	16
",	Slip on Auchengray Bog	-		-		4		-	-	13
808 "	Nentsberry Mining District		-		-		-		-	9
"	Clunes Gold Works -	-		-		-		-	-	167
,,	Australian Shaft Timbering		-		-				-	68
"	Jordan's Steam Engine	-				-		-	-	169
	FACING MODEL ROO	м :	En	TR	ANC.	E.				
Model o	f Naylor Vickers & Co.'s Steel Wor	ks					-		-	192
	RIGHT-HAND	Li	NE.							
Madel	6 Sandama Ban Tala of Winha									17
	f Sandown Bay, Isle of Wight Salt Mine at Hallstatt	-				-			-	102
. "	TT-11		-		-					102
"	Water Wheels at Devon Consols					•	1		•	102
"	Undercliff, Isle of Wight -									17
"	Underchin, Isle of Wight -									17
	EAST MODEL	R	00	w.						
	Entry Le									
	ENTRY LE	FI.								
Model o	f Lead Smoke Condenser -		-		-		-		-	182
"	German Man Engine -	-		-		-		-	-	122
,,,	Fowey Consols Engine -				-		-		-	123
"	Flat Drawing Chains -	-		-					-	90

- En	TRY RIG	нт.							
								I	age.
Model of Cornish Man Engine -		-		-		-		-	121
Single-link Chains -	-	Field	100		-		-10		91
West V	VALL AND	TA	BLE.						
Model of Dolcoath Mine -	II believe	E Gul						-	170
Safety Fuses			-				-	-	46
Mining Tools	diec Toe	-		-				-	18
Model of Cornish Steam Whim			-		-		-	-	77
" Read's Water Whim -	- Otella	noin Di		-		-		100	77
" Saxon Hand Whim		E.011	W. Tol		1.70		-	-	71
" Saxon Horse Whim -	-	-		-		-		-	73
Norma	Winn	- A							
	WALL AN	D A	REA.						
Mining Tools			-		*		-	-	18
Model of Fourneyron's Turbine -				-		-		-	107
" Mining Pump Valves ar					-		-	-	114
" Water Wheel at Wheal				•		-		-	107
D 1	No. Aut. 2d a								
EAST V	VALL AN	D AR	EA.					4	
Mining Tools	5. 是从投资。	DOWN	DDS (		L OR		-	4	18
Boring Tools	midde T. ba	ar Kritte						4	48
Model of Crusher					epino		- THE	-	132
Wire Ropes	- 4	1		-		-			91
Model of Water Pressure Engine	- 11 Ann	Jak	3 10 51		-		-	-	108
" Horse Whim with Skip	s -			-		100		156	72
" Safety Skip -	- "	dama	-100		- Cont		-	-	88
" Rouse's Underground V	Vhim -	Legal A		-30		-		-	89
South V	WALL AN	D TA	BLE						
Model of Saxon Turbine Whim			222						
Tandan's Wine Dane De	mn Dada		7		-		~	-	75
Camich Dumns in Shad	Action which is not to	AL TI		-		-		-	116
Comich Woten Whim					BUTTE		E .	200	115
Hans Water Whim	Chi	10.		00.00		50		dig	75
Couth Wales Plant From	one and E		UTE T		, DESE			100	74
" South Wales Blast Furi	lace and El	igine				i.		ENG	186
CEN	TRAL TA	BLE.							Con
Model of Cornish Pumping Steam	n Engine .		720		2 40		mul	HOT	109
, Cornish Horse Whim -						-		-	71
Taken per a disease de manda di ancione									16
WEST	MODEL	ROO	WI.						
LEF	T-HAND	LINE.							
Model of Methods of working Co	al -	and the	-		-		-	-	99
" Surface of Coal District						-		10	10
, Workings of a Fiery Co	olliery .	No.	-				-	-	101
,, Working of Shipley Col	liery, No.	-		-		1		-	96
	THE RESIDENCE OF								

# CENTRAL LINE.

of Cornich Man Regime 191	P	age.
Model of Dean Forest Coal Field	of a	8
" Jordan's Colliery Pit Frame	-	83
" Ebbw Vale Iron Works	-	8
, Ridley's Coal Cutting Machine	bb	47
00		
EAST LINE sloot		
Model of Inclined Plane at Upleatham	lab	92
Chipley Collismy No 9	10	98
* I The second of the second o	82	
ALONG THE NORTH WALL.	**	
Models of Pit Guides, Cages, and Safety Catches		80
Models of the Guides, Cages, and Safety Catches	nin	
GALLERY FLOOR.		
SMALL ROOM, C.	24	
101 - IN NOVE AND AND CONTROL OF THE PROPERTY AND	22	
Models of Geological Phenomena, by Mr. Sopwith -	-	3
" Small Cornish Tin Mine	-	170
" Saxon Lead and Silver Mining	din	172
" Timbering, Masonry and Tubbing	air	64
Derbyshire Crusher	500	134
Carrow D. Tanan		
Gallery D. Table.		
Model of Quarry Crane	4	94
" Sulphuric Acid Chamber	-	194
" Stannate of Soda Apparatus	4	194
" Pattinson's Desilverizing Apparatus	-	181
" Blast Furnaces for Iron Smelting -	-	185
I of Saxon Turoine White		
WALL CASE, No. 1.		
Corniel Passes in Shaft	to:	
Saxon Lead Furnaces	-	174
Belgian Zinc Furnace	-	177
Saxon Reverberatory Furnace	-	175
Hungarian Calciner	•	175
Cornish Tin Furnace -	-	176
Saxon Lead Ore Calciner	-	175
of Corolled Preping Bream English - 101		
Wall Case, No. 2.		
Silver Refining Furnace		180
Apparatus for Silver Extraction	-	180
Retort for Distilling Silver Amalgam		178
German Cupelling Hearth	156	179
Ore Sifting Machine		177
Silver Amalgamating Barrels		178
Mill for Grinding Silver Ores		177

## WALL CASE, No. 3.

											1	Page.
Founders' Cupola -			4	95 8 8		-		allo	elf.	20	ni-fir	189
Charcoal Iron Blast Furna	ce		T C		-		-		off		i len	185
South Wales Coke Ovens	-		-			-		ould		1-1	aido:	190
German Open Fire -			-		-						O sa	
Puddling Furnace -			- 400			2					datig	
881 188												
	WAI	LL	CASE	. No	). 4	1.						
0 77 1 101 77												
Ore Hearth and Slag Hear	th		300		-				-			183
Bystrom's Pyrometer			-			-		-		-	-	195
Muffle Furnace		•			-		-		-		-	198
Melting Furnace -	-		•	-		-		-		-	-	198
Siemens' Gas Furnace -		-	0.45		-		-		-		-	191
			ENTRY									
Three Drawings of Berard	's Coa	lI	ressing	Mac	hin	ery		-			-	160
callbrins, and not						100						
	-	7,	LLERY	E								
		U.A.	LLERI	L.								
	WA	LL	CASE	, No	0.	5.						
Safety Lamps	THI.		FRES		_				-		-	54
Ordinary Lamps -			-	-		-					-	52
Surveying Instruments -	Mon		on i				-		-		-	63
									0.			0)27
	W		Cian	NTO	0	100						
	WAL	L	CASE,	110	. 0	•						
Ventilating Machines			-							-	(4)	124
Windlasses					-		-		-			70
	WAL	L	CASE,	No.	. "	-						
Gay Lussac's Silver Assay	ing A	pp	aratus			-		-		-	-	196
	WAL	L	CASE,	No	. 8	3.						
Shakina Wakina												163
Shaking Tables	HE.	8	E O				0					157
Jigging Machines -	-		•	•		-				-		197
TETROS SHALL BEEN SH	TX7		a	NT.	0	,						
	WAL	L	CASE,	140	. :							
Saxon Sizing Sieve -	D. 100	7		and.	•		-		-		-	141
Rittinger's Jigging Machin	ie		•					-		-	-	161
	WALI	. (	CASE,	No.	1	0.						
Stamps	-		-						-		-	135
Hand Sieves				-							-	156
Trunking Machines -							-		-			144
Flat and Rotatory Frames	- "			-		-		-			146,	

#### viii

#### TABLE.

													1	Page.
Ventilating Machines	and I	Furi	nace	23	-		-		-	20	-		-	124
Round Buddle -										10		1	-	149
Hotching Machines	-		-		-				120	41/0	0-0		10	156
Slime Dressing Mach	inery					-				92		0	1141	142
Cornish Crusher	-		-		-		-				120			133
Rittinger's Rotatory	Frame	е		-		-		-		-			-	153
	1													

Ordinary Language Comment of the Com

The state of the s

der der eine Blackler Benede in die eine Tenner Benede geläner T

• A service Capacitae Standard and the post of Callage