THE HISTORY OF A LUMP OF CHALK, ITS FAMILY CIRCLE, AND THEIR USES

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649435135

The History of a Lump of Chalk, Its Family Circle, and Their Uses by Alexander Watt

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd. Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

ALEXANDER WATT

THE HISTORY OF A LUMP OF CHALK, ITS FAMILY CIRCLE, AND THEIR USES



THE HISTORY OF

A LUMP OF CHALK,

Its Family Circle,

AND THEIR USES,

BY

ALEXANDER WATT,

Author of " A Lump of Coal," etc.

WITH ILLUSTRATIONS.

"Where is the dust that has not been alive?"-Young.

A. JOHNSTON,

6, Paternoster Buildings, London, E.C.

188. q. 74.

PREFACE.

THE very favourable reception accorded to "A Lump of Coal," tempted its Author to prepare the present little treatise upon Chalk, and the various substances with which it is indirectly associated in the grand operations of Nature.

To render the work interesting to the general reader, an outline is given of the various useful purposes to which Chalk, and also Lime and its numerous compounds, are applied in the arts, manufactures and agriculture; and it is hoped that the variety and interesting nature of the accumulated facts will prove not only entertaining but instructive. 36 tri

28

8

23

* **

g 50 (60)

25 25

3

3

. P

CONTENTS.

—:o:—	
	AGE
CHAPTER ICHALK: WHAT IT IS COMPOSED OF-	
Origin of Chalk—Carbonate of Lime a	
WIDELY-DIFFUSED MINERAL	्रा
Is chalk of animal origin? Dr. Buckland's views-	
Dr. Macculloch's views	3
Sir C. Lyell's remarks on this subject	4
Microscopic shells in chalk	5
Carbonate of lime in sea-water-whence derived	5
Carbonate of lime necessary for the development of	
the shells of fish	6
Carbonate of lime necessary to the growth of plants .	6
Deposit of carbonate of lime from the hot springs of	
San Filippo	7
CHAPTER II.—THE CRETACEOUS AGE-GEOLOGICAL	
SKETCH-MOUNTAIN LIMESTONE	8
The cretaceous period divided into seven stages	8
The first cretaceous age-Dr. Mantell's discovery of	
the Iguanodon	8
The pterodactyle, or flying lizard	9
The second and subsequent stages of the cretaceous	-
age considered	9
age considered	9
Salmon and perch first called into existence	10
Fossil marine zoophytes and foraminifera	II
Paris built from stone formed by minute animals .	11
Mountain limestone	11
Limestone formation in Ireland	12
CHAPTER IIICHALK OF THE THAMES BASIN-CHALK	
BEDS OF KENT AND SURREY-RIVERS OF THE	
CHALK DISTRICTS	13
Where the rivers Loudwater, Colne, Lea, Kennet,	
Wandle, Stour, and other tributary streams	
which take their rise from the chalk, enter the	
Thames	14
The chalk formation of the London Basin	16
The chalk of Marlborough, Dover, Farnham, Guild-	
ford, etc.	16
ford, etc	17
The chalk of Kent	17
Chalk marl	17
CHAPTER IV.—CORAL—CORAL REEFS: HOW FORMED—	2.5
	17

vi .			co	NTEN	rs.						
									P	AGE	
50	How corals		rmed						•	18	
	Madrepores		0.700		*:	0.50				19	
	Coral reefs				*					19	
	What corals						3.8	75	*0	19	
00.	Pearls-Wh	at the	y are c	ompo	sed o	f.				21	
	How pearls	are fo	rmed			• 1	834			21	
	Mother of p	earl	1.6		100		200	(*)	(6)	22	
CH/	APTER V.	COMP	ACT]	LIMES	STON	E OF	M.	ARBLE	-		
	Antiq	UE A	ND M	DER	N M	ARBLI	es—C	CEMEN	T-		
	STONE	-CAI	C SPA	R-O	OLIT	E-C	OPRO	LITES		22	
	Classification						2000 CO		. 5	23	
	Different ki				0	19	30	92	- 33	23	
	Cement sto			20 m. P. Novo, 20					-	26	
	Calc spar—				- 5	•	15	- 55	- 33	26	
	Oolite, a var				- 8			•	- 33	26	
	Upper oolite	ilety c	it innies	Stone		200			•	27	
	Middle ooli					• 33	1	*			
			•	•	•	•				27	
	Lower oolit				•	*:	•	0.8		27	
	Coprolite, o	r dun	gstone	٠. ۵			13.53	4.1		27	
CH.	APTER VI										
	Dr. B										
	LIZATI	100000			CON	FAINI	NG L	IME	OR	23	
	CARBO			BIZ FELL		2	(14)			28	
	Chalk comp	pared	with ca	lcite		•			(0)	28	
	Babbington	ite —	dolomi	te—l	iydro	calcite	e-at	ıkerite	-		
	Babbington alstoni	te-p	ennite-	-plu	mbo-	calcite	ba	ryto-	cal-		
•	cite—s	tront	anite-	fluor	spar	200	0.00	×	20	-30	
23	Arragonite-	-calci	te-Ice	land	spar-	-idoc	rase	100.00		31	
	Felspar-ho	rnble	nde—g	arnet-	-ber	vl. or	aquai	marine		200	
										32	
	calc-sir Luzulite —	rock	salta	patite	-0'V	rolite	-ch	abasite		M.C.	
	thomso	nite -	- laun	onite	-fa	reölite	S	tilbite			
	diallage									33	
	Prehnite -	anonh	elite	pertol	ita	labeac	lorita	_ieon	WTO.	33	
	allanite	apopu	lactoni	to d	Arne:	to	Mile	-isop	yıc	2.4	
C.,	APTER VII.	- wu	Decemb	an.	T	ш.	- · c			34	
CH.	ALABA										
	LIMES					15-1	JITHO	GRAP	нис		
	24 0 4 THURSDAY 1	TONE-	WNH	YDRIT	re:			5.		34	
	Selenite . Lithographi			51	. 19					35	
		c sto	ne—bit	umen	ious	limes	tone,	or sti	nk-		
	stone Lucullite—:				3	٠.				36	
	Lucullite-	sulicio	as lime	stone-	-ma	gnesi	an lim	eston	e		
93	magne	sian c	arbona	te of l	ıme			(0)		37	
		161									

CHAPTER VIII FOSSIL REMAINS OF	THE	CRET	ACEO	JS .
AGE-THE IGUANODON AND				
THE PLESIOSAURUS-THE M	OSAS.	URUS	-Tr	E
ICHTHYOSAURUS - FOSSIL S				
NITES-FOSSIL PLANTS .		***		. 37
The hylæosaurus, or Wealden lizard	12	8		. 38
Fossil plants—cycadæ—coniferæ		9	U-18	. 39
The pterodactyle, or flying reptile				
The ichthyosaurus, or fish-lizard—T	he n	lecine		. 39
the mosasaurus	ne p	103103	aurus	
Professor Owen's observations on fo	eeil e	non <i>a</i> a		. 39
Professor Phillips on fossil sponges	Sour S	ponge	3	. 40
Ammonites		•	*	. 4
Cololites, or fossil intestines—fossil		abla .	·	. 4
Provident of challe under the min	veget	able i	reman	
Examination of chalk under the mic				. 43
The cretaceous formation—Dr. Page		servat	ions o	on
		•	•	• 43
CHAPTER IX LITHOLOGICAL ARRAN				
CRETACEOUS SYSTEM-DR. I	AGE	s OB	SERV.	۸-
TIONS ON CLASSIFICATION		•		. 44
The Megalosaurus—Crocodile .				. 45
Dr. Mantell's discoveries in the Tilg	ate F	orest	•	. 45
Dr. Morton on the chalk formation				. 45
CHAPTER X.—EVIDENCE OF FLOATING				
OF THE WHITE CHALK IN I				
OF SIR C. LYELL AND MR.				
-Spring-Water of the I	OND	ON B	ASIN-	
FORMATION OF CHALK PROM	COR	AL		. 48
Sir H. De la Beche on the spring wa	ter of	the l	Londo	n
Basin				. 51
Analysis of the water of Trafalgar S	quare			. 51
Formation of chalk from coral .			100	. 52
Mr. Darwin's observations .	90	¥10		. 52
Importance of microscopical examin				. 52
CHAPTER XICARBONATE OF LIME			SPHAT	E
OF LIME IN BONES-SUPERPHO				
AS MANURE - GUANO - ROT				
DOUBTPUL ORIGIN				. 53
Tripoli-skeletous of infusoria in re	otten-	stone	-Pro	£ 33
Inhaston's observations on	J. C.	Storio	1.0	
Johnston's observations on Chapter XII.—Quickline, How I	DEBT	ppn_	Live	. 55
Burning—Lime-Kilns—Use:	OP T	IMP	IN THE	
Arts	OF L	and a	M AH	
ARTS	•	1		- 57

viii		CONT	ENTS	. 3				
0.5							3	PAC
Lime, or	quicklime,	how b	urnt			•		
The draw	v-kiln desc	ribed .						3
The shaf	t-kiln-cal	cination	Ø			00 10 0		i
Lime us	ed in agric	culture-	-in	ourify	ing c	oal-gas	—in	-
	ing caustic							
ing	hair from	animal	skins	—in	the n	anufa	cture	
	mmonia, 8						A STATE	
	ter in medi		S 8		ġ į		. 3	5
	р.					86 - 50 0 5 6565 - 50 0 5		6
	d in manuf		r etan	ring f				ò
CHAPTER XI								
0,6500	D AND	Roma		CEME	NTS -	- Crm	ENT	
								6
 Hydrauli 								6
	ture of cen					8 8	200	0
	e, or tufa-s					F 19		6
	or cement-			8 3		5 9€	000	6
	ydraulic cer					en sent	20	6
Why hyd	lraulic cem	ents bee	come	harde	ned b	y time		6
Stone lin		41 14						6
CHAPTER XI	VCHLO	RIDE (or L	IME.	OR I	BLEACE	IING	33
	DER, ITS 1							6
Mr. C. T	ennant, hrs	t maker	of c	alorid	e or n	me in i	708	6
	ennant, firs						798	6
How chl	oride of lim	ne is ma	ide or	the !	large :	scale.		6
How chile Bleaching	oride of lim g powder u	ne is ma sed in p	de or	the l	large : ng, in	scale. white		6
How chle Bleaching cotts	oride of lim g powder u on goods o	ne is ma sed in p calicos	de or paper- es .	the l maki	large : ng, in	scale.		6
How chle Bleaching cotts Chloride	oride of lim g powder u on goods or of lime as	ne is ma sed in p calicos a disinf	de or paper- es . ectant	maki	large : ng, in	scale . white	ning	6
How chi- Bleaching cotts Chloride CHAPTER X	oride of lim g powder u on goods or of lime as V.—Prepa	ne is ma sed in p calicom a disinf	ede or paper- es . ectant	maki maki	large : ng, in FROM	scale . white Снаг	ning	6
How chi- Bleaching cotts Chloride CHAPTER X WH	oride of lim g powder u on goods or of lime as V.—Prepal ITING—Pr	ne is ma sed in p calicos a disinf RATION EPARED	ectant	maki maki DE	large : ng, in FROM – PRE	SCALE. White CHAI	ning	6
How chi- Bleaching cotts Chloride CHAPTER X' WH	oride of lim g powder u on goods or of lime as V.—Prepa ITING—PR	ne is ma sed in p calicoe a disinf RATION EPARED S OF I	ectants CH	the land	large : ng, in FROM PRE	CHAIC	ning .k— TED	6
How chle Bleaching cotts Chloride CHAPTER X' WH CHA	oride of lim y powder u on goods or of lime as V.—Prepa ITING—Pr LLK—SALT:	ne is ma sed in proceedings calicons a disinfunction EPARED S OF L URETS (ectants MA	The lands	large : ng, in FROM PRE	CHAIC	ning .k— TED	6
How chle Bleaching cotts Chloride CHAPTER X' WH CHA	oride of lim g powder u on goods or of lime as V.—Prepa ITING—Pr LK—SALT: M—SULPHO E—CHROD	ne is ma sed in proceedings a disinful RATION: EPARED S OF L URETS OF	ectanis M/ OF CA	the making	FROM PRE	CHAIC	ning .k— TED	6
How chle Bleaching cotts Chloride CHAPTER X' WH CHA	oride of lim g powder u on goods or of lime as V.—Prepa ITING—Pr LK—SALT: M—SULPHO E—CHROD	ne is ma sed in proceedings a disinful RATION: EPARED S OF L URETS OF	ectanis M/ OF CA	the making	FROM PRE	CHAIC	ning .k— TED	6
How chle Bleaching cotts Chloride CHAPTER X' WH CHA	oride of lim g powder u on goods or of lime as V.—Prepa ITING—Pr LK—SALT: M—SULPHO E—CHROD	ne is ma sed in proceedings a disinful RATION: EPARED S OF L URETS OF	ectanis M/ OF CA	the making	FROM PRE	CHAIC	ning .k— TED	6 6 6 6
How chle Bleaching cotts Chloride CHAPTER X' WH CHA	oride of lim g powder u on goods or of lime as V.—Prepa ITING—Pr LK—SALT: M—SULPHO E—CHROD	ne is ma sed in proceedings a disinful RATION: EPARED S OF L URETS OF	ectanis M/ OF CA	the making	FROM PRE	CHAIC	ning .k— TED	6 6 6 6
How chle Bleaching cotts Chloride CHAPTER X' WH CHA	oride of lim y powder u yon goods or of lime as V.—PREPA ITING—PR LLK—SALT: M—SULPHE E—CHROM how prepa white .ted chalk—	ne is ma sed in proceedings a disinful RATION: EPARED S OF L URETS OF	ectanis M/ OF CA	the making	FROM PRE	CHAIC	ning .k— TED	666666
How chi- Bleaching cotts Chloride CHAPTER X' WH CHA CIUI LIM Whiting, Spanish Precipitat Salts of Crystals	oride of lim g powder upon goods on of lime as V.—PREPAL ITING—PR LLK—SALT: M—SULPHO E—CHROM how prepay white . ted chalk— lime .	ne is may sed in a calicost a disinfunction of the calculation of the cample of calculation of c	ectanis MA	the maki	FROM PRE LORIDE M—A cormed	CHALL CIPITA B OP (CETAT)	ning K— TED CAL- E OF	666666
How chi- Bleaching cotts Chloride CHAPTER X' WH CHA CIUI LIM Whiting, Spanish Precipitat Salts of Crystals	oride of lim g powder upon goods on of lime as V.—PREPAL ITING—PR LLK—SALT: M—SULPHO E—CHROM how prepay white . ted chalk— lime .	ne is may sed in a calicost a disinfunction of the calculation of the cample of calculation of c	ectanis MA	the maki	FROM PRE LORIDE M—A cormed	CHALL CIPITA B OP (CETAT)	ning K— TED CAL- E OF	666666666666666666666666666666666666666
How chi- Bleaching cotts Chloride CHAPTER X' WH CHA CIUI LIM Whiting, Spanish Precipital Salts of Crystals Sulphure	oride of lime as of lime as of lime as lime lime lime lime of chloride ts of calci	ne is may sed in a calicost a disinfunction of calcium, how a calcium, a ca	ectanis MACA CHARACTER CANAL C	the maki	FROM PRE ORIDE M—A cormed	CHALL CIPITAR OF CETAT	ning K— TED CAL- E OF	6666666
How chi- Bleaching cotts Chloride CHAPTER X' WH CHA CIU: LIM Whiting, Spanish Precipital Salts of Crystals Sulphure chro	oride of lime as of calcium of lime at of lime of l	ne is made seed in probable of calcium, howe-Mri	ectands of Charles of	the maki	FROM PRE ORIDE M—A cormed	CHALL CIPITAR OF CETAT	ning K— TED CAL- E OF	6666666
How chi- Bleaching cotts Chloride CHAPTER X' WH CHA- CIU- LIM Whiting, Spanish Precipital Salts of Crystals Sulphure chro	oride of lime growder upon goods or of lime as V.—PREPAL ITTING—PRILLE—CHROMANIE—CHROMANIE—CHROMANIE—CHROMANIE—CHROMANIE—CHROMANIE—CHROMANIE—CHROMANIE—CHROMANIE—COF Chloride ts of calciumate of lime—lace of lime as lime of lime o	ne is made seed in probable of calcium, howe-Mri	ectands of Charles of	the maki	FROM PRE ORIDE M—A cormed	CHALL CIPITAR OF CETAT	ning K— TED CAL- E OF	666666
How chi- Bleaching cotts Chloride CHAPTER X' WH CHA- CIVI LIM Whiting, Spanish Precipital Salts of Crystals Sulphure chro Nitrate of Interesting	oride of lime as V.—Prepa ilme as V.—Prepa ilme as V.—Prepa ilme — Saltime—Chrom how prepa white . ted chalk—lime . of chloride its of calcimate of lime filme—lac Notes	ne is may sed in a calicos a disinfunción a disinfu	ectanies M/CHA OF CA	the maki	FROM PRE ORIDE M—A cormed	CHALL CIPITAR OF CETAT	ning K— TED CAL- E OF	66666667777
How chi- Bleaching cotts Chloride CHAPTER X' WH CHA CIU LIM Whiting, Spanish Precipital Salts of Crystals Sulphure chro	oride of lime as young or lime as young of lime as young of lime as young or lime as young or lime as young or lime as young or lime. Chrown they white to deal white its of calciumate of lime filme—lac Notes Observat	ne is may sed in a calicos a disinfunción a disinfu	ectanies M/CHA OF CA	the maki	FROM PRE ORIDE M—A cormed	CHALL CIPITAR OF CETAT	ning K— TED CAL- E OF	6666666