INDEX TO CONTENTS—continued.

PART I.—THE GEOLOGY AND BOTANY OF THE DUNES—continued.	Page	PART II.—THE RECLAMATION OF THE DUNES—continued.	Page
		III. Methods of reclamation—continued.	
II. Botany—continued.		(h.) Preserving dune-areas as farm-lands-con-	
(A.) Ecological botany—continued. (c.) The plant associations of the New Zealand		tinued.	
sand-dunes	27	(iv.) Grassing operations—continued. (β .) Pasture and its relation to drifting	
(i.) General	27	sand	53
(ii.) Dune associations proper	27	$(\gamma.)$ Grasses, clovers, and other fodder	•
(a.) Sand-grass dunes (3.) Per caprae dunes	$\begin{array}{c} 27 \\ 28 \end{array}$	plants for sand-pastures	54
(3.) Per caprae dunes (γ) Dunes of the Auckland	40	(a.) General	54
Islands	28	(b.) The annual lupins, and their employment	54
(δ.) Shrub dunes	28	(c.) Grasses	
(a.) Sand-shrub dunes	28 29	(d.) Clovers	
(b.) Heath dunes $(\epsilon.)$ Fixed dunes	30	$(\delta.)$ The type of seed to be sown	56
(a.) Shrubby and grassy	.,,	(c.) The grassing \dots \dots \dots \dots \dots \dots \dots \dots	~
dune	30	(a.) General (b.) Grassing after marram	57 57
(b.) Dune forest	30	(c.) Treatment of surface wounds,	٠.
(iii.) Hollows and sand-plains	30 30	blow-outs, &c	57
(a.) General (8.) The moist sand-plain or	90	(d.) Treatment of sand-plains and	
hollow	31	hollows(1.) General	58
$(\gamma.)$ Manuka heath	31	(1.) General (2.) Treatment of sandy fields	58 58
(δ .) Lakes and swamps (ϵ .) Dry hollows		(3.) Sandy hollows without	00
	$\frac{32}{32}$	humus	58
(ζ.) Rapid drift on to sand-plain (η.) Stony plain		(4.) Scrubby hollows	58
(iv.) Inland dunes	-	(e.) Seed-mixtures (l.) General	59 59
(a.) Central Otago	33	(2.) Table for computing seed.	99
(\$\beta\$.) Canterbury Plain	33	mixtures	59
(γ.) Volcanic plateau (δ.) Ancient dunes of Stewart	33	(3.) Method of calculating	
(s.) Affects duffes of recewart	33	amount of seed required	59
(c.) Aucient dunes near Bluff	••••	(4.) Seed-mixtures for special	60
Harbour, Southland	32	purposes (A.) For sandy flats	-60
(B.) Floristic botany (a.) General remarks	33	(B.) For moist hollows	60
	33	(C.) For dry hollows	60
(b.) List of the indigenous Pteridophyta and Spermophyta	34	(D.) General mixture for	
(c.) List of the naturalized plants	42	permanent pasture	00
() = -		on stable hills (E.) For sowing amongst	60
PART II.—THE RECLAMATION OF THE DUNES.		marram	60
I. Introduction	43	(i.) Afforestation of dunes	60
(a.) General	43	(i.) General	60
(b.) Marram-grass and tree-lupin as plants for dune-fixing	44	(ii.) The more important trees and shrubs for dune-afforestation	۵.
for dune-fixing (i.) Marram-grass	44	(a.) Compare monitation and it	61 61
(n.) ree-rupin	44	(a.) Olearia Traversii	61
II. The present condition of the dune-areas	45	(b.) Pinus pinaster	61
III. Methods of reclamation	46	(c.) Araucaria excelsa	
(a.) General (b.) The planting of marram-grass	46 47	(d.) Cupressus macrocarpa	61
(i.) Time of planting	47	(e.) Pinus insignis (f.) Pinus muricata	61 62
(ii.) Preparing the plants	47	(g.) Tamarix gallica	62
(iii.) Methods of planting	47	(h.) Lupinus arboreus	62
(a.) Spade planting	47	(β.) Trees not tolerating sea-spray but	
$(\boldsymbol{\beta}.)$ Long-handled shovel planting	47	growing well in sand	62
(γ.) Plough planting	48	(a.) Various species of Eucalyptus (b.) Various species of Acacia	62 62
$(\delta.)$ German methods of planting	48	(1.) Acacia melanoxylon	62
(ϵ) Distance apart of the bunches		(2.) The various Australian	-
(c.) Management of marram-areas	48	wattles	62
(d.) Cost of marram-grass planting	49 49	(3.) Other species of Acacia (c.) Willows	62
(f.) Sand-fences and ground-coverings	49	(d.) Poplars	$\begin{array}{c} 62 \\ 63 \end{array}$
(i.) General	49	(e.) Various kinds of pine-trees	63
(ii.) Catching-fences	50	(f., Alnus glutinosa	63
(iii.) Wind-fences $(g.)$ Checking sand-movements	50 50	(iii.) Methods of establishing the trees	63
(g.) Checking sand-movements (i.) Protection-belts	50	(a.) General.(β.) Establishing plantations from seed	63
(ii.) The foredune	5 l	(a.) General	63 63
(a.) General	51	(b.) Methods of procedure	63
(3.) Method of construction	51	$(\gamma.)$ Tree-planting	64
$(\gamma.)$ Artificial foredunes in New Zealand	52	(a.) General	64
(h.) Preserving dune-areas as farm-lands	52 52	(b.) The planting (c.) The nature of the ground to be	64
(i.) General	52	planted	64
(ii.) Burning	52	(d.) The use of manures	65
(iii.) Treatment of the dune-complex	52	IV. Dune-reclamation from the national standpoint	65
(iv.) Grassing operations $(\alpha.)$ General	53 53	V. List of plants suitable for dune-cultivation in	
(a.) General	oo.	New Zealand	66
	APPI	ENDIX.	
L. List of works consulted	•		71
(b.) Literature relating to the New Zealand dur	nes .		71 73
II. The Sand Drift Act			75
		•••	, ,,