

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

SELECTION  
IN  
DAIRY CATTLE  
IN  
NEW ZEALAND

---

A  
Dissertation  
by

"BREW"

H. Gilman

1st November, 1939.

MASSEY UNIVERSITY



1061111835

### DEFINITION.

"Selection takes place whenever some kinds of individuals are caused or permitted to produce and rear more offspring than other kinds do. Under some circumstances selection may quickly cause large and permanent changes in the population. Under other circumstances it may cause marked changes, but the moment selection is relaxed, the population returns to its original condition. Under still other circumstances, selection may be virtually powerless to produce any change unless it is combined with some mating system like inbreeding."

J.L. Lush.

---

# SELECTION IN DAIRY CATTLE IN NEW ZEALAND.

## CONTENTS.

### A. INTRODUCTORY:

|   |   |
|---|---|
| The importance of Selection in New Zealand Dairy Cattle Breeding ... .. | 1 |
|---|---|

### B. THE DEVELOPMENT OF NEW ZEALAND DAIRY CATTLE BREEDING .. 7

#### I. The Multiplication of Cattle Numbers ... .. 8

##### a. The Period of Local Trade ... .. 9

|  |    |
|--|----|
| (i) 1814-1851 - The Introduction of Cattle ... | 9  |
| (ii) 1852-1881 - The Phase of Early Expansion  | 13 |

##### b. The Period of Export Trade ... .. 18

|   |    |
|---|----|
| (i) 1881-1895 - The Phase of Adjustment ..        | 18 |
| (ii) 1896-1913 - The Phase of Steady Expansion    | 23 |
| (iii) 1914-1919 - The Phase of War-Time Expansion | 35 |
| (iv) 1920-1934 - The Phase of "Intense" Expansion | 39 |
| (v) 1934 - - The Phase of Consolidation ...       | 49 |

##### c. Selection and Development ... .. 62

|   |    |
|---|----|
| (i) Development ... ..                    | 62 |
| (ii) The influence of Herd Testing ... .. | 79 |

#### II. The Registered Purebred Stock ... .. 89

##### a. General ... .. 89

##### b. Origins and Development of the Breeds ... .. 92

|                     |     |
|---------------------|-----|
| 1. The Shorthorn .. | 95  |
| 2. The Ayrshire ... | 100 |
| 3. The Jersey ...   | 105 |
| 4. The Friesian ... | 109 |
| 5. The Red Poll ... | 113 |

##### c. The Development of the Breeds in New Zealand 117

|                           |     |
|---------------------------|-----|
| 1. The Shorthorn ..       | 117 |
| 2. The Milking Shorthorn. | 120 |
| 3. The Ayrshire ...       | 125 |
| 4. The Jersey ...         | 128 |
| 5. The Friesian ...       | 133 |
| 6. The Red Poll ...       | 136 |

##### d. Functions of the Breed Associations ... .. 141

##### e. The Institution of C.O.R. Testing ... .. 145

##### f. Government Official Herd Test ... .. 148

#### III. ORGANISATION OF THE GENERAL DAIRY CATTLE POPULATION.

##### a. The Importance of Commercial Herds ... .. 150

##### b. The Role of the Registered Purebred Sire ... 155

##### c. The Rise of the Jersey ... .. 161

### C. THE ROLE OF SELECTION IN DAIRY CATTLE IMPROVEMENT ... 175

### D.