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Patterns of Flowering Periods in Selected Floras of the World(6)

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世界各國의 植物相花期型에 對하여(6)

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ABSTRACT

Patterns of flowering periods of Ben Lawers, Eastern suburbs of Melbourne, and Tasmanian floras are compared. The total sum of each flowering period of the following floras are gradually increased from Ben Lawers to Tasmania and Eastern subarbs of Melbourne. These patterns seem to be related with the factors of temperature. A peak of the flowering periods of Ben Lawers flora occur' in July, while Eastern suburbs of Melbourne in October, and Tasmania in November to December. The patterns of these flowering periods are characteristic of and divided into two categories, northern arctic and southern temperaturate hemispheric types.

INTRODUCTION

Since 1969, the auther has reported patterns of flowering periods in selected floras of the world (1969, 1971, 1972, 1973, 1981). This study proposes to find the patterns and sum of flowering periods of floras in Ben Lawers, Melbourne and Tasmania. The patterns are given in Tables(1,2) and diagrams(1,2,3) for comparing with each other and also for relation between the flowering periods, temperatures, and precipitations.

MATERIALS AND METHODS

The Ben Lawers and its alpine flowers, Australian Native Plants, Guide to flowers and Plants of Tasmania are used to calculate the data of flowering periods. The temperatures and precipitations are taken from the World Weather Records.

Flowering periods of the floras were calculated from January to December. The total of flowering periods in a month is expressed in two ways, viz., absolute number of flowering entries and number of flowering species which are in flowering in percent of the total number of species. If one species continues to bloom during the year from January to December, this is counted for each month in the year. The data of temperatures were taken from the records of the following weather stations; Melbourne; 37°49′ S; Hobart(Australia): 42°53′ S; and Abordeen(Scotland): 57°12′ N. station. The flowering periods of three floras were figured together with temperatures and precipitations in order to find correlations between the factors.

RESULT OF THE STUDY

The calculated data follow Tables(1,2) and figures(1,2,3)

Table 1. Flowering entries and percentages

Locality	Taxa	Total	1	2	3	4	5	6	7	8	9	10	11	12	Month
Ben Lawers	85	207	0	0	0	1	11	61	79	48	7	0	0	0	Entries
		243.5%	0	0	0	1.2	12.9	72.1	92.9	56.5	8.2	0	0	0	Percentage
Eastern suburbs of Melbourne	502	3046	206	188	182	179	191	194	230	294	369	385	354	274	Entries
		606.7%	41.0	37.4	36.3	35.7	38.0	38.6	43.8	58.6	73.5	76.7	70.5	54.6	Percentage
Tasmania	250	814	128	79	13	6	6	5	8	11	106	132	160	160	Entries
		325.6%	51.2	31.6	5.2	2.4	2.4	2.0	3.2	4.4	42.4	52.8	64.0	64.0	Percentage

Table 2. Temperatures and precipitations

Temperature	1	2	3	4	5	6	7	8	9	10	11	12	Month
Ben Lawers(Abordeen)	2.4	2.8	4.5	6.5	9.0	12.0	14.0	13.6	11.7	8.8	5.6	3.7	°C
Melbourne	19.9	19.7	18.4	15.1	12.5	10.2	9.6	10.5	12.4	14.3	16.2	18.4	°C
Tasmania(Hobart)	16.3	16.1	15.1	12.4	10.5	8.3	7.8	8.8	10.6	11.8	13.6	15.1	°C
Precipitation	1	2	3	4	5	6	7	8	9	10	11	12	Month
Ben Lawers(Abordeen)	77	54	52	50	62	53	92	73	65	90	91	78	mm
Melbourne	45	59	50	62	54	52	54	50	18	74	70	58	mm
Tasmania(Hobart)	42	47	52	63	51	66	47	53	53	72	58	64	mm

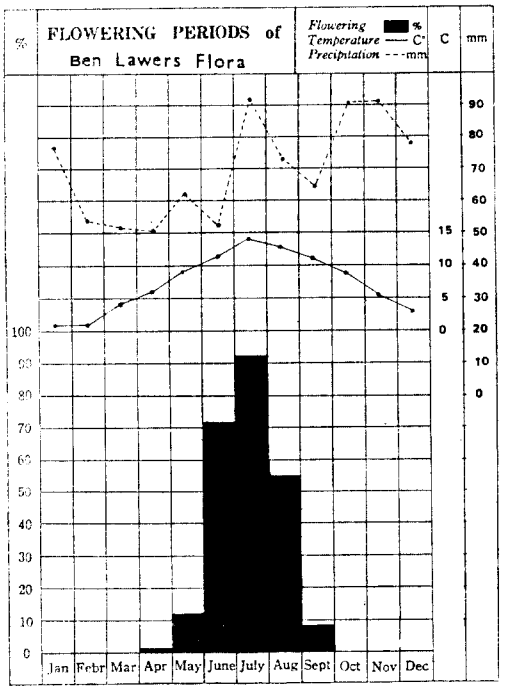

Fig. 1.

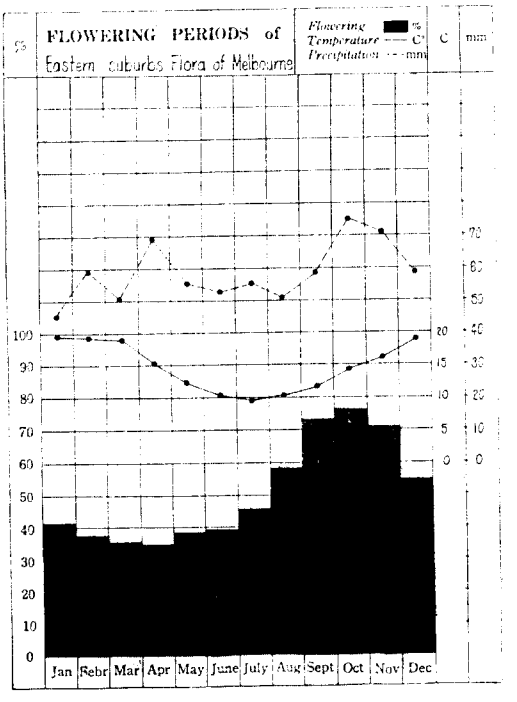

Fig. 2.

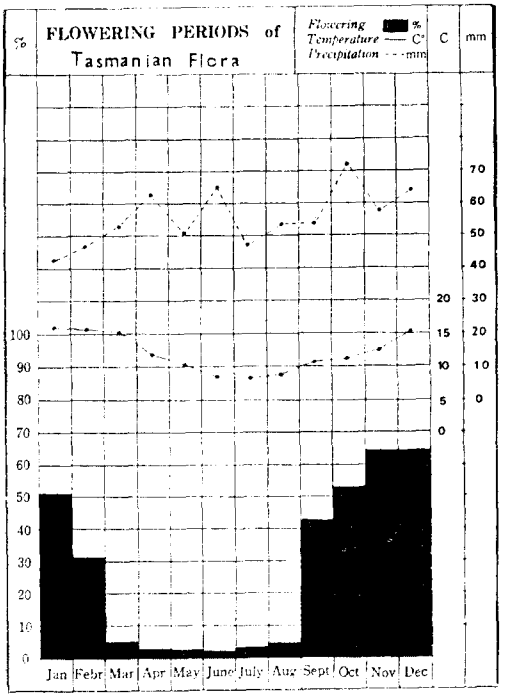

Fig. 3.

DISCUSSION

The patterns of fowering periods of Ben Lawers flora showed flowering peaks in July, whereas flowering seasons are limited in April to September. The patterns of flowering periods of Melbourne and Tasmanian floras are much similar to each other. The lowest flowering season of Tasmania is March to August, while Eastern suburbs of Melbourne is January to June. The peak flowering period of Tasmania occurred in October, but Melbourne in November and December. These patterns of flowering periods are characteristic, of and divided into two categories, befitting northern arctic Ben Lawers and south temperate hemispheric types. The author consider these patterns are more influenced by the temperatures than by the precipitations.

The total sum of flowering periods of Tasmania is 326, while Ben Lawers is 242, which is much smaller than the 602 of Eastern suburbs Melbourne. The patterns and sum of flowering periods seems to be more related with temperatures than with precipitations.

摘　　要

1969年 이래 世界 各國의 植物相花期型에 對한 硏究를 하여왔다.

금번의 花期型은 北半球에 있는 Scotland의 Ben Lawers, 南半球에 있는 Australia의 Melbourne과 Tasmania의 植物相 花期型을 밝힌 것이다. Ben Lawers의 植物相花期型은 4月에서 9月에 자리를 잡고 花期率이 가장 높은 달은 七月이며 月花期率의 總和는 242를 나타냈다. 그러나 Melbourne과 Tasmania의 植物相 花期型은 正月에서 六月까지 低率이었으며 높은 開花率의 時期는 10月에서 12月로 나타났고 開花率의 月別總和는 Melbourne이 602, Tasmania가 326으로 되었다.

이 3地域의 植物相花期型과 氣溫과는 密接한 것이라고 생각되었다.

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