(Chrysanthemum cinerariæfolium Boic.) in India and with the help of the Imperial Council of Agricultural Research experimental cultivations have been started at a number of stations. As reported by Burns, pyrethrum has failed to establish itself at Dharwar, Poona, Saharanpur, Dehra Dun, Chaubattia (Ranikhet U.P.), Sakrand (Sind), and Ranchi, but the attempts have succeeded at Murree, Kulu, Palampur, Kashmir and since the time of the above report, also at Shillong, Mayurbhanj, Kodaikanal, Coonoor and Mysore.

It is well known that success in the cultivation of pyrethrum depends upon the type of soil, altitude of the locality, climate, distribution of rainfall, cultural and manurial treatment, conditions of flowers at harvesting, etc. Full data are not yet available for all the stations where pyrethrum has been a success and in their absence it is not possible to discuss the reasons why the pyrethrum grown at Kodaikanal is superior to that grown in Murree but it may be stated that the Indian experiments appear to prove what has been established elsewhere, namely, that pyrethrum grows best in localities with 40-80 inches of rainfall, well distributed throughout the year. Pyrethrum failed to flourish in Dehra Dun because of nearly 60 inches of rainfall during the three rainy months, which damped off the plants.

In the following table the pyrethrin content of pyrethrum flowers (open), obtained from different localities, is recorded and for comparison the figures for Kenya, Japanese and Dalmatian flowers are also given. All the figures given in the table are comparable, as they have been obtained by the same method

## PYRETHRIN CONTENT OF INDIAN PYRETHRUM

During the past few years much interest has been taken in the cultivation of pyrethrum

Locality			Altitude	Annual rainfall	Normal rain- fall in July, August and September	Pyrethrin I	Pyrethrin II -	Total Pyrethrins
Kashmir		313 333 33	ft.	in.	in.	%	%	%
Tangmarg			7,200	15 +	11	0.35	0.57	% 0 <b>·9</b> 2
		1	Chartenio:	winter snow		0.5 .55	8. 25.7	
Baramulla			5,200	38	6	0.32	0.62	0.94
Punjab			5.53 <b>.6</b> 33.57.55				100	
Palampur ·			4,500	101	72	0.22	0.68	0.90
Murree			7,113	57	31	0.37	0.66	1.03
Kulu			4,500	39	15	0.35	0.40	0.75
N.W.F. Province			302*007*51	2007		105 (505)	(15) (775)	0 10
Tarnab			2,000	17	6	0.31	0.59	0.90
United Provinces								0 00
Dehra Dun '			2,239	87	59	0.63	0.15	0.78
Garhwal						12.00	•	, 5 10
(Pandar range)			4,000	70	44	0.29	0.28	0.57
Madras	PT		200 M 170 M 60	100	05325	NO. 70.70	N31 7033	
Kodaikanal			7,688	62	19	0.76	0.62	1.38
Coonoor			5,730	64	. 10	0.44	0.45	0.89
Assam			• • • • • • • • • • • • • • • • • • • •			0.000 (T-00)	135 15350	0 00
Shillong4		••	4,921	84	40	_		1.41
Orissa								
Mayurbhanj6	• •		1,600	60	32	_		1.15
Mysore		1			12	1		2.10
Bangalore <sup>5</sup>	•••	••	3,021	35	16	-	-	0.80
Kenya	••	٠.	7-9,500	40-65		0.77	0.56	1.33
Japan			_	40-80	-	0.38	0.63	1.01
Dalmatia	• •	••	_	40		0.35	0.63	0.98

of assay, namely, a combination of  $\mathrm{Seil}^2$  and  $\mathrm{Pantsios.}^3$ 

Forest Research Institute,
Dehra Dun,
S. V. Puntambekar.
June 6, 1943.

<sup>1.</sup> Burns, Indian Farming, 1941, 2, 58. 2. Seil, Chem. Trade J., 1934, 85, 168. 3. Pantsios, Ind. and Eng. Chem., Anal. Ed., 1935, 10, 386. 4. Chakrabarti, Indian Farming, 1942, 3, 12, 652. 5. Anon, Ibid., 1942, 3, 8, 441. 6. Lahiri, Ghose and Chopra, J. Amer. Pharm. Assoc., 1941, 30, 72.