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SERIES I. EVALUATION OF FOREIGN FRUITS AND NUTS.//

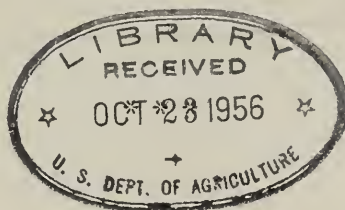
NO. 2. PEACHES AND NECTARINES

X BLOSSOMING AND LEAFING RESPONSES OF FOREIGN AND DOMESTIC  
PEACHES AND NECTARINES TO TEMPERATURE X

BY

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This report is prepared as a cooperative service to state and federal experiment stations and presents evaluation data taken at the Chico Plant Introduction Garden. Varietal names listed are those under which the material was introduced.

November 1955.



Blossoming and Leafing Responses of Foreign and Domestic  
Peaches and Nectarines to Temperature

By William L. <sup>I</sup>Ackerman,<sup>1</sup> Lloyd E. Joley<sup>2</sup> and Dean Halsey<sup>3</sup>.

With more and more attention being given to the breeding of new varieties suitable to particular climatic conditions, knowledge as to the relative times of blossoming and leafing of domestic and foreign varieties of peaches and nectarines is of growing interest. As a part of the program of evaluating plant introductions at the United States Plant Introduction Garden at Chico, California, the annual recording of various phenological characteristics has been an important phase of the work. This paper presents the portion of these data which relate to the times of full bloom and of first foliation of the several hundred variety and seedling peaches and nectarines in the Chico collection. The particulars on first foliation are additional to those supplied by Ackerman (1). Since a representative analysis of blossoming and leafing data showed a close correlation, only blossoming data has been utilized in the general discussion.

Procedure.

The data from which this paper was compiled cover 1949, 1950, 1951 and 1953, that for 1952 being too sparse to include. In general, trees were considered to have reached full bloom when approximately 75 percent of the blossoms had opened. The time of first leaf emergence was determined as that time at which a reasonable proportion of terminal leaves over the tree as a whole had grown to approximately one-fourth to one-half inch in length.

Temperatures in degrees Fahrenheit reported here are those recorded from Standard Weather Bureau maximum and minimum thermometers located in a standard weather shelter within approximately one-half mile of the farthest trees. The number of hours at or below 45 degrees F was computed from charts of a recording thermograph located in the same shelter.

The soil varies from a vine sandy loam to a vine loam. An alluvial soil, it was transported from the hills and mountains to the east and ranges in depth from eight to twelve feet.

Occasional variations in the times of full bloom and first leafing were noted among some asexual propagations of individual clones. In most cases these were in widely separated locations. Trees showing wide variations and suspected of being affected by physical injury or disease were removed from the list. Differences in minimum temperatures of as much as 5 degrees F are known to occur between different sections of the Plant Garden. Temperature, rootstock, soil or moisture influences may account for most of these variations.

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The introductions listed in the tables include named varieties, unnamed seedlings and the asexual progeny of some of the latter. Each is identified by its Plant Introduction number and location in the orchard. Names of foreign varieties are those carried in the Plant Introduction Inventory, but since variety authenticity has not been established in some cases, they do not necessarily assume trueness to name. Nectarines are identified by the abbreviation (nect.) following the variety name or seedling. All clones not so designated are peaches. Seed introductions are identified in the tables by the numeral two (2) after the name of the source; all others were received as plants or scions. Source as used in this paper refers to the country from which the material was introduced; it may or may not have originated there. Section or province within a country is given where it is felt this might be useful. Seedlings with the same P.I. number are members of a population resulting from a lot of seed introduced under that number. Where seedlings have been asexually reproduced, the parent tree, when still present, is listed first, followed by its vegetative progeny. These latter are further identified by adding the parent tree location. New P.I. numbers are assigned to outstanding seedlings so as to distinguish them more easily from other members of the population. These are considered as selected seedlings and are so indicated by the numeral three (3) after the seedling.

Since the relations of the time of full bloom and also first leafing of the various clones to each other, rather than the actual dates, are of primary interest, index numbers have been substituted for dates. These index numbers are consecutive numbers representing the consecutive days of the year beginning with January 1 as suggested by Bradford 3. An index thus represents the same month and day in each of the four years involved (1949, 1950, 1951 and 1953).

Table 1 lists a small group of the more popular peaches, according to Dorsey (5), and also a few of the nectarines grown in the peach-growing districts of the country. These were selected as known standards for comparison with the large number of relatively unknown clones listed in Table 2.

In Table 2 a large collection of foreign and domestic peaches and nectarines are arranged in sequence of earliness of full bloom based upon indexes representing the average date of full bloom of the four years considered in this paper. Individual yearly indexes representing the time of full bloom and also first leaf are listed to indicate seasonal variation. Also included are the numbers of hours of temperature at or below 45 degrees F from November 1 to full bloom for each year.

Table 3 contains a summary of the weather conditions prevailing at Chico from November 1 until April 10 during the four years of this study. Included are the weekly averages of daily maximum and minimum temperatures and an accumulative summation of precipitation along with the number of hours at which the temperature was at or below 45 degrees F.

#### DISCUSSION.

The winters at Chico are rather mild as compared with those in many of the peach-growing areas of the country, yet only occasionally is there insufficient chilling to cause noticeable delayed dormancy in peaches and nectarines and rarely are such conditions serious enough to impair fruiting markedly.

Hutchins, cited by Weinberger (7), stated that for Georgia conditions 1000 accumulated hours of 45 degrees F or below is sufficient to break the rest period of most

varieties of peaches. Weinberger in addition suggested that at Fort Valley, Georgia, if a variety had not had its chilling requirement satisfied by February 15, it tended to suffer from prolonged dormancy even though additional chilling occurred later. In this study, 1000 hours was reached considerably before this date in 1949 and 1950. However, in 1951 this accumulated amount was not reached until February 22 and in 1953 it was reached on February 15, as shown in Table 3.

The dormant season of 1948-49 was unusually cold and rather dry. The first three weeks in March were, however, cloudy and wet, there being seventeen days of rain and only two clear days during this period. Although there appeared to be sufficient cold to break dormancy, the continued low temperatures and cloudy, wet weather held back the normally early-blossoming clones.

The data in Fig. 1 indicate that blossoming in 1949 was pushed toward what is considered the latter part of the season. This resulted in a diminished range (only 26 days) between the time of full bloom of the earliest clone and that of the latest as compared with ranges of 41, 51 and 55 days for 1950, 1951 and 1953, respectively. Bradford (3), Yarnell (10, 11), Pearce and Preston (6) and others have noted that the progressive development of fruit buds toward flowering is conditioned by hours of warm temperature during the dormant season as well as by those below 45 degrees F. In 1949 the first occurrence of full bloom was on March 15, when there had been 1394 hours above 45 degrees F; in 1950 it took place on February 24 with 1414 hours; in 1951 on February 15 with 1640 hours and in 1953 on February 8 with 1467 hours. Thus, it would appear that even though the cold requirements had been met, the heat requirements were not fulfilled until rather late in 1949, and this deficiency of heat contributed to the lateness of blossoming that year.

The 1949-50 season was one of alternating periods of rather warm and relatively cold weather for Chico. November of 1949, with its mean maximum of 71.2 degrees F and mean minimum of 42.6 degrees F, was the warmest in the fifteen years from 1940 to 1954. Twenty-two of the thirty days of that month were recorded as clear and sunny. December 1949, on the other hand, averaged as one of the coldest Decembers during this same period, the temperature remaining fairly uniform throughout the month. There were, however, four days, December 1, 2, 8 and 28, in which maximums of 60 degrees to 66 degrees F were recorded. Sixteen of the thirty-one days were clear and sunny. The first half of January was likewise uniformly cool. Up to January 16 there had been 960 hours of 45 degrees F or below, of which 754 had occurred since December 6. This 960 hours compared with 1086, 680 and 808 hours for 1948-49, 1950-51 and 1952-53, respectively. For the week of January 17 to 23 there was, however, a sudden rise in temperature. Because of predominantly cloudy weather, the maximum temperature reached only 64 degrees F but the minimum never went below 44 degrees F. Mean temperature for this week was 55.7 degrees F, as compared with 37.9 degrees F for the other three weeks and 41.9 degrees F for the entire month. From January 24 on through February 14, the temperatures were again comparatively cool. The weather then warmed up considerably and continued to be rather mild though variable throughout March.

It would appear that the 1295 hours of 45 degrees F or below that had accumulated by February 13, 1950 (Table 3) should have been sufficient to meet the chilling requirements of almost all the peaches that year. However, as shown by Fig. 1, the blossoming pattern for 1949-50 turned out to be rather peculiar as compared with that of the other three years. Because of the early accumulations of hours of cold followed by the comparatively warmer weather after February 14, the early and mid-season types

came into bloom rather early, but the later blossoming types were pushed considerably beyond their anticipated time of bloom. Bennett (2) in an experiment with pears found that alternating periods of cold and warm temperatures were not as effective in breaking dormancy of leaf buds as continued cold without interruption, even though the total cumulative exposure to cold was the same. In an experiment with the peach variety Sullivan Elberta, Weinberger (8) found certain periods at which delay in breaking dormancy of peach buds was most susceptible to higher temperatures. He concluded that high temperatures in November and December had more effect on prolonging dormancy for this variety than in January, but that December was the most critical month for Fort Valley, Georgia, conditions.

Thus, according to the views of Bennett (2) and of Weinberger (7, 8) the warmer than usual November 1949 and the week of warm weather in January 1950 would tend to retard clones with longer chilling requirements. For those requiring less chilling, the colder than usual December and early January would tend to offset the November warmth, while the warm break in January would tend to force into bloom those whose dormancy was broken. That this appears to be something of the case is shown in Fig. 1. Clones with low chilling requirements began to bloom a short time after the weather warmed in mid-February. Even the greater bulk of the collection requiring moderate chilling had their blooming period pushed ahead. On the other hand, clones requiring the most chilling tended to bloom later in relation to the main group in 1950 than in any of the other years. This is evidenced by the prolonged spread of the right side of the curve for the 1950 blossoming season.

There is an interesting break in the 1950 curve, about March 22, for which no ready explanation is evident. This break had its inception at a time when daytime temperatures were approximately 63 degrees to 67 degrees F and those at night 45 degrees to 47 degrees F. There was some cloudiness but little precipitation. Colder temperatures and rain did not occur until the frequency rise was again well under way.

The months of November and December 1950 were unusually warm. By January 2, 1951 only 421 hours at or below 45 degrees F had accumulated as compared with 801, 651 and 674 hours for the same dates in 1949, 1950 and 1953 (Table 3). The rainfall for November was rather high and during the last two weeks of December, almost all of January and the first half of February there were much cloudiness and heavy fog. Only a fair amount of cold occurred in January, there being 386 hours at or below 45 degrees F from January 2 to 30 as compared with 578, 466 and 204 hours for the same period in 1949, 1950 and 1953, respectively.

Although this was a relatively warm winter no distinct abnormalities in blossoming or leafing were noted in 1951. In contrast, delayed dormancy was very apparent among some clones in 1953 even though the total number of hours at or below 45 degrees F was slightly higher in 1953 than in 1951. Weldon (9), Chandler et al (4) and others have noted the beneficial effects of various kinds of shading in breaking the rest period of plants. Thus, in spite of the warm weather of November and December, the dense fog and cloudy weather of the 1950-51 season were apparently an important factor in alleviating whatever temperature deficiencies there may have been that year.

November and the first three weeks of December 1952 were rather cool. By December 19 there had been the largest accumulation of hours at or below 45 degrees F in any of the four years, there being 536 hours by that date as compared with 512, 397 and 100 hours in 1948, 1949 and 1950, respectively (Table 3). Although the accumulations



between November 1 and December 19 are strikingly similar for 1948 and 1952, the similarity ends there. From December 19 on through the early weeks of 1953 there was much warm weather resulting in a greatly reduced rate of increase in accumulation of hours at or below 45 degrees F. Thus a comparison shows 636, 674, 762 and 878 hours on December 26, 1952, January 2, 16 and 30, 1953, and 668, 801, 1086 and 1379 hours for these same dates in 1948-49. This premature rise in temperature in the early part of 1953 brought about exceptionally early blossoming of peaches whose chilling requirements were met by the earlier cold (Fig. 1). These observations agree with those of Weinberger (7) that intensive early winter chilling hastened the rest-breaking processes. Thus, in this case clones with lower chilling requirements came into early bloom because their rest period was broken early and subsequently there was a sufficient accumulation of heat units to push them into bloom as suggested by Bradford (3), Pearce and Preston (6), Yarnell (10, 11) and others.

Even among the types with high chilling requirements the effect of the over-all warm winter in causing delayed dormancy was, with one exception, not readily observed. The exception occurred among some peach introductions from China numbered P.I. 101663 through 101689 (Table 2). Although rather obvious, the delay was not observed until after the time of first leaf. Actually, foliation in this group developed to a stage slightly beyond first leaf and then remained visibly unchanged for about three weeks before growth again resumed and full leaf was eventually reached.

The primary objective of this paper was to make available a list of the large number of foreign and domestic peaches and nectarines in the Chico collection, along with as many data as possible pertaining directly to individual and collective reactions to climatic conditions in this area. This study disclosed that the phenological responses of blossoming and leafing of this collection are in accord with those published by others working with more limited plant collections. Different clones vary considerably in heat requirements necessary for blossoming as well as in chilling requirements to break dormancy. Yarnell (11) stated that these requirements for heat and for cold are determined by distinct genes. It is hoped that the rather detailed study of weather conditions during the four seasons and the plant responses to these conditions may present a better picture of what the plant breeder may expect from foreign introduction material.

Footnote: Evaluation of many of the introductions listed in this paper is about complete. Space limitations call for their removal during the winter of 1956. Readers are urged to request of L. E. Joley at the U. S. Plant Introduction Garden, Chico, California, scions or budwood of any that may be of interest.

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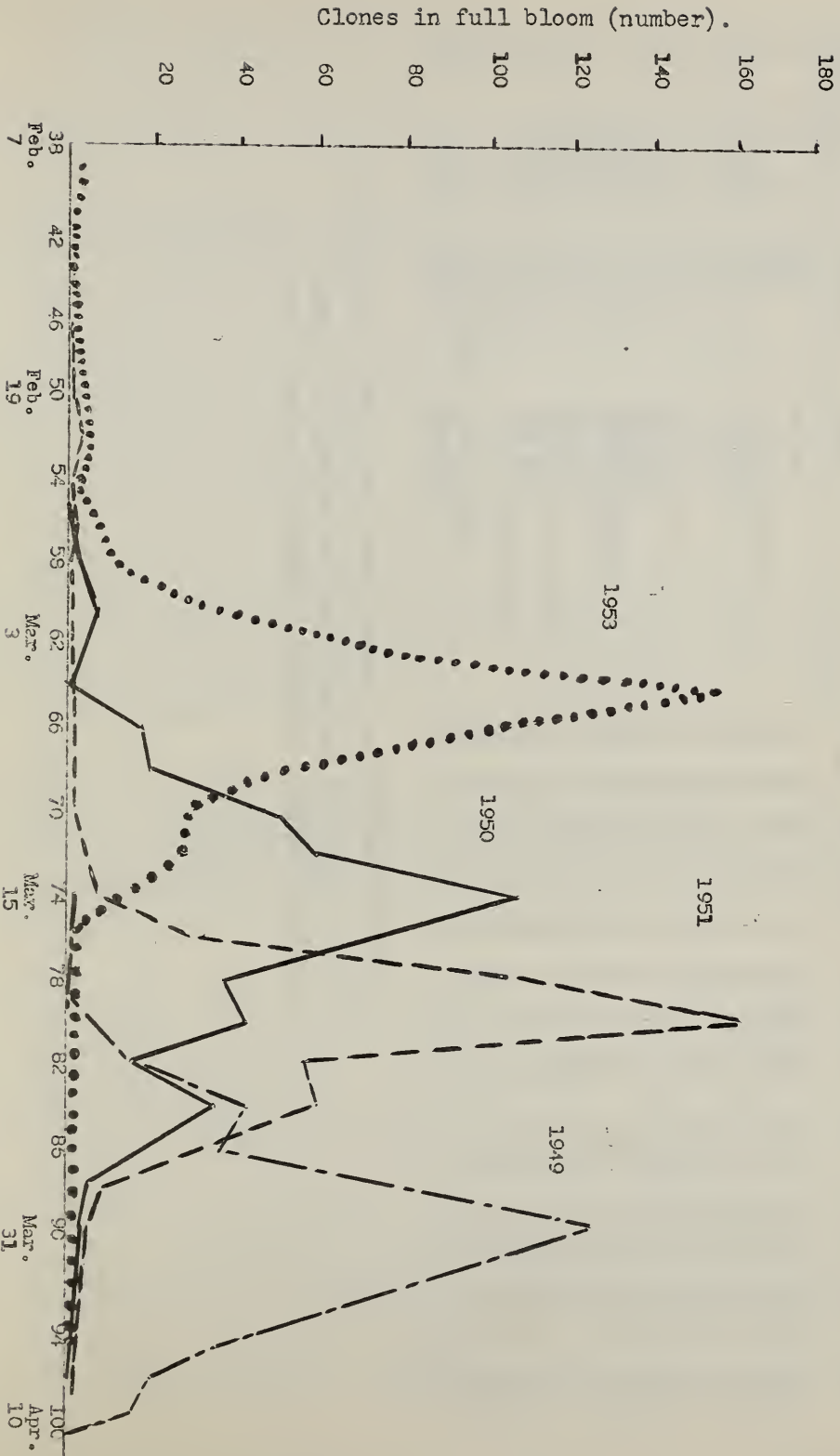


FIG. 1. Full Bloom Frequency Curves for 1949, 1950, 1951 and 1953.

Indexes and Dates of Full Bloom Based on Two Day Intervals.



TABLE 1 - Indexes of Time of Full Bloom, First Leaf, and Hours of Temperature at or below 45°F. from November 1 until Full Bloom for a Group of Peach and Nectarine Varieties Selected as Standards of Comparison.\*

AVE. PLOT INDEX	P.I.	LOCATION	NAME	I N D E X E S								HOURS OF TEMPERATURE			
				FULL BLOOM				FIRST LEAF				AT OR BELOW 45 F. FROM			
				19	19	19	19	19	19	19	19	NOV. 1	UNTIL	FULL BLOOM	
49	50	51	53:	49	50	51	53	1949	1950	1951	1953				
71	C-26646	E8/26	Babcock	90	65	72	55	90	65	71	54	1892	1392	1265	1111
"	"	N9/2	"	86	69	75	57	79	65	73	57	1869	1411	1281	1150
73	34685	D44/17A,18A	Quetta (nect) (3)	—	67	77	63	—	63	75	58	—	1401	1296	1205
74	149312	E14/6	Dixigem	81	72	79	65	81	68	79	58	1842	1450	1303	1222
75	143910	E5/3	Redhaven	87	69	78	67	81	65	76	54	1874	1411	1302	1205
"	"	E11/28,29	"	86	69	79	69	82	65	79	60	1869	1403	1303	1234
76	C-26640	N7/3,4	Rio Oso Gem	87	70	78	61	80	66	76	58	1874	1471	1302	1184
"	C-27151	D39/5,6	Elberta	88	71	79	65	88	66	74	58	1882	1439	1303	1222
"	126562	E3/5,6	Halehaven	89	69	78	66	86	66	76	57	1885	1411	1302	1229
77	126559	E13/24,25	Golden Jubilee	90	72	80	65	89	65	79	56	1892	1450	1303	1222
78	C-26644	N6/5,6	J. H. Hale,	87	84	79	62	82	71	80	61	1874	1502	1303	1194
79	126561	E3/1,2	Veteran	87	79	83	67	81	78	78	56	1874	1475	1320	1234
"	131031	E26/25,26	Garden State (nect.)	91	79	80	65	86	72	77	58	1898	1475	1300	1221
80	C-26647	N9/4,5	Red Bird	89	83	79	70	84	70	80	65	1885	1493	1303	1234
81	77625	E23/26,27	Early Rivers (nect.)	91	80	80	67	89	86	85	—	1898	1476	1303	1233
"	"	E23/36,37	" " "	91	84	86	70	91	86	87	75	1898	1502	1341	1234
83	77626	E23/29,38,39	John Rivers "	91	86	84	70	90	85	85	—	1898	1504	1323	1234
85	C-26642	N8/1,2	Mayflower	96	91	79	73	88	74	87	73	1908	1527	1303	1259

\* All varieties in Table I are domestic except the following nectarines:

Quetta — a selection from seed introduced from India

Early Rivers and John Rivers — received as scions from England

TABLE 2.— Indexes of Time of Full Bloom, First Leaf, and Hours of Temperature at or below 45 degrees F. from November 1 until Full Bloom for Peach and Nectarine Varieties and Seedlings grown at Chico, California

AVE. BLOOM INDEX	P. I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE			
					FULL BLOOM				FIRST LEAF				AT OR BELOW 45° F. FROM			
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53	NOV. 1 1949	UNTIL 1950	FULL 1951	BLOOM 1953
56	89969	D9/7	Seedling	St. Helena (2)	—	55	52	39	92	53	44	41	1898	1358	988	927
"	"	G5/45, 46	" (D9/7)	"	74	60	52	40	74	50	44	43	1833	1371	988	936
57	109449	F4/81	Tosari Seedling	Java (2)	84	58	46	41	80	49	41	37	1863	1363	916	949
"	"	F4/83	"	"	84	58	46	41	80	49	41	37	1863	1363	916	949
"	133510	D39/9,10	Rennie	Australia	74	59	56	39	74	48	44	39	1833	1367	1049	927
58	133497	D39/1,2	Bell's November	"	74	59	58	39	83	51	44	38	1833	1367	1086	927
59	109449	F4/101	Tosari Seedling	Java (2)	87	58	46	46	80	49	41	37	1874	1363	916	1003
"	"	G4/18,19	" (F4/101)	"	86	60	51	40	84	51	41	37	1869	1371	972	936
"	112035	E12/41,42	Shanghai Freestone	India	81	60	54	42	81	52	45	40	1842	1371	1024	962
"	133504	D39/45,46	King of All	Australia	76	59	61	40	74	57	54	38	1833	1367	1139	936
"	133730	D45/8,9	Mellor Park Crimson	"	—	60	52	46	77	58	45	39	—	1371	988	1003
61	105843	E2/25, 26	Edward VII	"	85	59	55	45	81	51	62	39	1869	1367	1037	988
"	106062	E18/15,16	Killicrankie	S. Africa	82	60	55	48	82	59	54	44	1850	1371	1037	1023
"	146130	E15/19,20	Chico 11(3)	China (2)	79	61	54	47	73	48	—	37	1837	1372	1024	1013
"	"	G5/20	"	"	83	61	57	46	74	49	44	37	1855	1372	1071	1003
62	125025	E18/23,24	China Flat	India	86	61	54	48	79	49	40	37	1869	1372	1024	1023
63	146131	D8/2	Chico 12(3)	China (2)	—	65	66	49	91	64	60	46	1917	1392	1207	1037
"	"	G5/39,40	"	"	78	65	71	46	77	58	67	47	1833	1392	1257	1003
65	129674	E18/29,30	Angel	S. Africa	86	60	67	47	82	60	71	46	1869	1371	1213	1013
66	112032	E9/8,9	Sabaranpur #1	India	84	60	71	47	82	57	66	46	1863	1371	1257	1013
"	132032	E6/21,22	Bailey x Davidiana	U.S.A.	—	65	64	53	81	72	74	63	—	1392	1189	1089
67	113650	E13/10,11	Pollardi	Italy	81	61	71	55	81	65	71	55	1842	1372	1257	1111
"	133498	E12/7,8	Black Braddock	Australia	87	68	69	48	81	60	67	46	1874	1392	1238	1023
69	92763	E10/3,4	Seedling	Morocco	—	65	74	54	89	65	77	54	—	1392	1273	1099
"	113452	E13/2,3	Rogant-gow	U.S.S.R.	81	65	71	57	87	68	79	63	1842	1392	1257	1130
"	125577	J4/95	Sdg. of Shaftala	Afghanistan (2)	77	65	73	57	84	62	81	67	1833	1392	1273	1130
"	"	G5/27,28	" (J4/95)	"	84	66	74	57	81	69	69	61	1863	1401	1273	1130
70	6385	E4/21,22	Shalil	India (2)	86	65	76	53	86	68	76	52	1869	1392	1302	1069
71	55770	D44/16,17,18,19,20	Yunnan	China (2)	84	69	75	53	81	72	71	55	1863	1411	1281	1111
"	117679	E13/12,13	Clone #01370	U.S.S.R.	81	69	74	61	88	75	84	70	1842	1401	1273	1184
"	128547	E15/5,6	Clone #1376	U.S.S.R.	88	69	71	57	88	81	81	70	1882	1411	1257	1130
"	130726	J13/132	Seedling	Mexico (2)	—	65	76	62	84	56	55	48	—	1392	1290	1194
"	138966	D45/24,25	Seedling No. 12	Argentina (2)	84	68	76	56	78	61	70	49	1863	1403	1290	1121
"	146032	P22/46	Seedling (nect.)	Iran (2)	76	72	76	59	79	59	77	64	1833	1458	1290	1151
"	146134	J1/128	Chico 15(3)	India (2)	95	68	74	55	84	58	67	45	1908	1403	1273	1111
"	"	G5/41,42	"	"	83	67	73	52	77	62	71	51	1855	1401	1273	1079
"	151632	D46/4	Beltsville #10362	U.S.A.	84	69	74	57	79	63	73	57	1863	1411	1273	1130
72	C-26636	M5/2	Luckens Honey	"	—	69	76	57	—	66	74	54	—	1411	1290	1130
"	57686	D44/11	Selection #1	Chile	—	67	73	54	—	60	72	49	—	1401	1281	1099
"	"	E5/37	"	"	89	65	78	56	81	63	79	53	1885	1392	1302	1121
"	61302	E2/7,3	Bolivian Cling & Quetta nect.	U.S.A.	81	67	78	63	84	68	76	58	1842	1401	1302	1205
"	133505	D45/7	Late Queen	Australia	83	68	75	63	94	67	77	62	1855	1401	1281	1222

NOTE - (2) introduced as seed  
(3) selected seedling

AVE. BLOOM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45° F. FROM			
					FULL BLOOM				FIRST LEAF				NOV. 1 UNTIL FULL BLOOM			
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53	1949	1950	1951	1953
72	144145	E14/30	Seedling	Argentina(2)	—	69	76	59	—	60	68	55	—	1411	1290	1251
"	146135	G5/2,3	Chico 16(3)	India(2)	87	66	77	57	84	53	69	48	1874	1401	1298	1130
"	146136	J4/144	" " "	" "	98	65	76	59	88	56	69	50	1912	1392	1290	1151
"	"	G5/12,13	" " "	" "	84	70	75	57	84	60	69	53	1863	1425	1281	1130
"	148395	E14/1,2	Fireglow	U.S.A.	81	67	79	62	81	65	79	56	1842	1401	1303	1194
73	C-27059	E15/7,8	Bokhara	"	88	66	79	59	88	77	71	54	1882	1401	1303	1151
"	C-27184	D44/5,6	Redwing(patent)	"	84	69	73	64	81	61	72	62	1863	1411	1273	1214
"	43124	E3/39,40	A-1	New Zealand	84	6f	78	63	81	65	69	53	1863	1401	1302	1205
"	43289	D17/29	Eagle Beak-Ying Tsui Tao	China	95	69	75	—	91	73	73	—	1908	1411	1281	—
"	"	E11/4,5	" " "	" "	90	66	77	56	80	65	77	55	1892	1401	1298	1121
"	63851	D16/14	Shalil	India(2)	92	66	75	—	91	65	75	55	1898	1401	1281	—
"	63852	D16/15,16	" " " " Cling	"	91	65	75	—	82	65	67	56	1898	1392	1281	—
"	82413	E11/6,7	Baladi #1	Palestine(2)	88	67	79	56	87	60	77	53	1882	1401	1303	1121
"	110268	F4/109	Seedling	Brazil(2)	87	71	75	58	84	67	68	54	1874	1439	1281	1138
"	"	F4/110	" " "	"	89	71	76	57	84	67	68	54	1885	1439	1290	1130
"	113454	E13/6,7	Ferganensis #59	U.S.S.R.	81	68	79	64	90	68	79	57	1842	1403	1303	1214
"	116806	G5/36	Sdlg. of Aru(OA-72)	India(2)	83	71	78	60	79	59	71	55	1855	1439	1302	1170
"	125016	E14/23,24	Ranniyaya Repta	U.S.S.R.	81	69	77	63	87	64	71	54	1842	1411	1298	1205
"	125019	E14/28	Unknown peach	"	81	68	79	63	87	68	79	56	1842	1403	1303	1205
"	126578	D44/21,22	Sieger	Germany	84	71	76	61	81	64	76	57	1863	1439	1290	1184
"	131034	D44/29	Spathe de Hallen	Poland	84	71	78	58	80	64	76	60	1863	1439	1302	1138
"	131548	D44/33,34	Double Montagne	Belgium	84	70	78	61	80	63	71	58	1863	1425	1302	1184
"	133756	D39/27	Willow Leafed Elberta	Australia	84	71	78	58	88	65	75	56	1863	1439	1302	1138
"	136580	D45/23A	Belle Imperiale	France	—	69	76	62	—	62	72	60	—	1411	1290	1194
"	138966	E10/35	Seedling No. 5	Argentina(2)	90	68	77	55	81	60	77	48	1892	1403	1298	1111
"	"	E7/33	" " " 9	" "	90	66	77	60	81	64	77	52	1892	1401	1298	1170
"	"	E45/27A	" " " "	" "	—	71	77	56	—	62	72	47	—	1439	1298	1121
"	"	E6/25,26	" " " 13	" "	81	69	78	64	81	59	73	52	1842	1411	1302	1214
"	"	E6/33	" " " 15	" "	90	65	78	55	81	64	75	49	1892	1392	1302	1111
"	"	D45/30A	" " " "	" "	—	69	77	56	—	60	73	52	—	1411	1298	1121
"	139195	D39/18,19	Wiggins	Australia	82	71	75	62	86	65	75	61	1850	1439	1281	1194
"	"	D45/31A	"	"	—	71	77	63	—	64	77	61	—	1439	1298	1205
"	143742	D40/18	Roberta	U.S.A.	84	69	77	59	92	63	72	54	1863	1411	1298	1151
"	"	D45/33A	"	"	—	69	77	61	—	60	71	54	—	1411	1298	1184
"	145997	P21/42	Seedling	Iran(2)	84	71	79	58	81	65	76	60	1863	1439	1303	1138
"	146021	P21/18	" (nect.)	"	86	65	79	60	84	65	80	59	1869	1392	1303	1170
"	148199	E14/15	Henrietta	U.S.A.	81	69	79	62	81	68	79	55	1842	1411	1303	1194
"	"	D45/26	"	"	84	74	75	62	80	68	76	59	1863	1463	1281	1194
"	148623	P24/54	Seedling (nect.)	Iran(2)	84	68	79	62	79	64	77	60	1863	1403	1303	1194
"	"	P24/55	" " "	" "	84	67	80	62	79	64	77	59	1863	1401	1303	1194
"	"	P24/56	" " "	" "	84	68	79	61	79	65	79	60	1863	1403	1303	1184
"	149397	E13/1	Southland	U.S.A.	—	66	79	64	81	65	79	56	—	1401	1303	1214
"	"	E14/36	"	"	81	67	79	64	81	65	71	55	1842	1401	1303	1214
"	151635	D45/39,39A	Redglobe	"	—	66	77	62	—	62	73	57	—	1401	1298	1194
"	151650	D46/14,15	Sandhill #1	"	—	69	74	61	77	63	72	57	—	1411	1273	1184
"	151651	D46/26,27	Sullivan's Elberta	"	84	70	74	62	79	64	70	58	1863	1425	1273	1194
"	153811	D46/37,38	Early East	"	84	71	75	63	81	63	74	58	1863	1439	1281	1205
74	C-26677	E13/28	Stanford	"	87	65	79	63	90	65	79	57	1874	1401	1303	1205
"	C-27155	D40/42,44	Ellis	"	82	72	78	64	92	68	76	59	1850	1450	1302	1214
"	C-27158	D40/21,22	Nestor	"	89	70	77	58	89	67	76	58	1885	1411	1298	1130
"	C-27185	D44/7,8	Golden Blush	"	84	72	77	62	78	60	71	56	1863	1450	1298	1194
"	C-27186	D44/9,15	Curlew (patent)	"	94	71	78	62	79	64	75	55	1863	1439	1302	1194
"	36126	E3/35,36	Bolivian Cling	Bolivia(2)	82	71	78	67	86	74	78	64	1842	1439	1303	1238
"	57925	D39/11,12	Lord Kitchenor	New Zealand	84	67	77	64	84	67	72	56	1863	1411	1298	1214
"	82648	E96/1	Seedling	U.S.S.R.(2)	80	71	78	64	88	74	76	57	1855	1439	1290	1214
"	"	E96/3	"	"	81	70	77	64	86	71	76	58	1855	1439	1290	1214

AVE. BLOOM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45°F. FROM			
					FULL BLOOM				FIRST LEAF				NOV. 1 UNTIL FULL BLOOM			
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53	1949	1950	1951	1953
74	113456	E13/8	Ferganensis #808	U.S.S.R.	81	69	79	66	90	76	79	70	1842	1411	1303	1229
"	116806	G5/10,11	Sdlg. of Aru (OA-13)	India(2)	86	70	76	63	84	62	70	54	1869	1425	1290	1205
"	119836	E14/3,4	Khidistavsky	Turkestan	81	7	80	62	86	68	79	56	1842	1463	1303	1194
"	119840	E14/9,10	Turnip-shaped	"	84	56	80	64	84	65	77	54	1863	1401	1303	1214
"	129609	D44/23,24	Emerson (neot.)	Australia	84	72	77	62	84	63	71	56	1863	1450	1298	1194
"	130723	J13/11,5	Seedling	Mexico(2)	—	68	75	61	84	56	67	53	—	1403	1291	1184
"	"	J13/120	"	"	—	69	75	61	84	56	66	49	—	1411	1281	1184
"	130907	D39/25,26	Victoria (neot.)	England	84	69	77	64	88	67	72	57	1863	1411	1298	1214
"	130937	D39/7,8	Summercrust	U.S.A.	84	71	77	64	84	66	72	57	1863	1439	1298	1214
"	131029	E19/15,16	Newday	"	89	67	77	62	82	65	77	54	1885	1401	1298	1194
"	131518	D39/23,24	Guzia (neot.)	France	88	70	78	59	92	65	74	57	1882	1425	1302	1151
"	131788	D39/37,38	Genard	"	84	75	78	59	92	78	79	59	1863	1471	1290	1151
"	132005	D44/38,39	Eiserner Kanzler	Germany	—	70	75	64	84	65	71	62	—	1425	1281	1214
"	133508	D40/1,2	Phillips Ciling	Australia	84	72	73	65	88	74	72	57	1863	1439	1265	1222
"	133547	E12/25,24	Elberta Ciling	"	68	69	77	65	96	64	77	56	1882	1411	1299	1205
"	133861	D40/45,46	Lippiatt's Late	New Zealand	54	71	77	54	89	63	73	57	1877	1439	1298	1214
"	133863	D45/14,15	Rikaku Jap	"	84	71	77	64	81	65	75	59	1863	1439	1298	1214
"	133992	D45/19A,21	Van Rensburg	S. Africa	86	71	78	61	82	60	72	57	1869	1439	1302	1184
"	135866	J19/130	Seedling	India(2)	89	71	76	61	83	62	73	60	1885	1439	1290	1184
"	137908	J15/98	"	Iran(2)	92	66	79	59	83	60	73	51	1898	1401	1303	1151
"	"	J15/110	"	"	91	66	78	60	83	61	73	51	1896	1401	1302	1170
"	138966	E7/27,28	" No.10	Argentina(2)	90	65	78	62	81	59	77	54	1892	1392	1302	1194
"	141096	J16/95	"	Iran(2)	39	67	78	62	83	65	74	60	1885	1401	1302	1205
"	143207	D40/4	A.persica, pendula rosen	England	84	73	76	—	88	59	74	—	1863	1458	1290	—
"	143741	D39/13,14	Hiley	U.S.A.	84	59	77	65	78	65	73	56	1863	1411	1298	1222
"	144655	D45/27,28	Gage Elberta	"	84	72	77	61	79	63	72	59	1863	1450	1298	1184
"	145997	P21/21	Seedling	Iran(2)	84	71	79	60	79	67	79	60	1863	1439	1303	1170
"	"	P21/29	"	"	84	74	80	59	81	65	79	60	1863	1463	1303	1151
"	"	P21/34	"	"	84	73	80	59	81	67	76	61	1863	1458	1303	1151
"	"	P21/46	"	"	86	74	78	58	81	64	78	62	1869	1463	1302	1138
"	146016	P20/66	" (neot.)	"	86	71	77	62	81	65	79	61	1869	1439	1298	1194
"	146021	P21/5	"	"	88	68	79	61	81	67	75	60	1869	1403	1303	1184
"	146132	D50/28	Chico 13(3)	India(2)	88	69	77	59	83	57	69	50	1882	1411	1298	1151
"	"	G4/30,31	"	"	85	75	78	65	84	67	75	57	1869	1458	1302	1222
"	148265	E14/19	Gemmer's Late Elberta	U.S.A.	81	69	78	67	81	68	79	61	1842	1411	1302	1238
"	"	D45/30	"	"	84	73	77	60	79	64	77	59	1863	1458	1298	1170
"	148620	P24/38	Seedling	Iran(2)	83	71	75	60	79	67	75	62	1882	1439	1281	1170
"	148622	P24/50	" (neot.)	"	87	71	75	63	81	65	77	60	1874	1439	1281	1205
"	"	P24/51	"	"	86	69	77	62	79	65	76	62	1869	1411	1298	1194
"	148623	P24/52	"	"	86	69	78	62	79	65	79	61	1869	1411	1302	1205
"	"	P24/53	"	"	84	68	81	61	79	65	75	62	1863	1403	1312	1184
"	"	P24/57	"	"	86	68	80	65	79	65	78	60	1869	1403	1303	1194
"	"	P24/58	"	"	86	69	80	60	79	65	79	59	1869	1411	1303	1170
"	"	P24/59	"	"	86	69	81	60	81	71	81	59	1869	1411	1312	1170
"	148624	P24/62	"	"	84	69	80	62	81	59	77	60	1863	1411	1303	1194
"	"	P24/64	"	"	86	69	79	61	79	59	79	61	1869	1411	1303	1184
"	"	P24/66	"	"	86	71	77	62	81	60	80	62	1869	1439	1298	1194
"	151158	D45/31,32	Royal George (Jorge)	Argentina	84	72	77	62	79	67	77	62	1863	1450	1298	1194
"	204968	E14/13,14	Ferganensis	Turkestan	81	70	79	64	89	70	79	55	1842	1425	1303	1214
75	C-25877	N1/12	Palora	U.S.A.	86	68	78	61	79	69	75	58	1869	1403	1302	1205
"	"	N2/4	"	"	80	82	74	63	79	68	77	58	1869	1468	1273	1205
"	C-26635	N4/1	Gaume	"	84	82	77	61	79	69	76	59	1863	1489	1298	1184
"	"	N5/1	"	"	80	76	76	59	82	69	76	59	1863	1471	1290	1151
"	C-26648	N9/6,7	Falford #2	"	80	77	74	62	82	66	77	62	1869	1471	1273	1194
"	C-27154	D39/33,34	Farida	"	84	73	77	67	83	73	75	57	1863	1458	1298	1238



AVE. BLOOM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45°F. FROM				
					FULL BLOOM				FULL LEAF				NOV. 1 1949	UNTIL 1950	FULL 1951	FROM 1953	
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53					
75	C-27183	D44/3,4	Robin (patent)	U.S.A.	84	73	76	66	84	76	76	71	1863	1458	1290	1229	
"	"	80128	E4/37,38	Agostina	Italy	87	69	78	63	86	69	76	54	1874	1411	1302	1205
"	"	"	E15/11,12	"	"	88	72	79	62	84	68	77	53	1882	1450	1303	1194
"	"	86295	F1/7	Seedling	Iran(2)	87	72	76	65	84	66	67	59	1874	1450	1290	1222
"	"	105466	F4/52	"	Argentina	84	71	77	68	84	64	71	60	1863	1439	1298	1234
"	"	105839	E9/30,31	Black King	Australia	90	66	80	63	87	65	76	54	1892	1401	1303	1205
"	"	105854	E2/27,28	Shanghai Slip	"	87	70	78	65	85	68	78	64	1874	1425	1302	1222
"	"	107838	F4/95	Sdlg. of Mao tao	China(2)	87	72	78	63	87	69	77	59	1874	1450	1302	1205
"	"	113455	E2/41,42	Ferganensis #02446	U.S.S.R.	87	72	78	63	89	72	78	64	1874	1450	1302	1205
"	"	119841	E14/11,12	" #849	Turkestan	83	72	79	68	89	68	79	58	1842	1450	1303	1234
"	"	126564	E3/9	Valliant	U.S.A.	86	69	78	65	86	69	78	56	1869	1411	1302	1222
"	"	"	D44/42A	"	"	---	69	77	66	---	66	75	61	---	1411	1298	1229
"	"	126567	E3/7,8	Wilma	"	86	69	79	65	83	69	76	55	1869	1411	1303	1222
"	"	129804	E18/35,36	Black Prince	Australia	88	70	80	63	86	65	77	54	1882	1425	1303	1205
"	"	129810	E11/8,9	Noonan	"	89	68	79	64	88	68	79	57	1885	1403	1303	1214
"	"	129814	E11/12,13	Sim's Cling	"	87	68	79	64	86	65	77	56	1874	1403	1303	1214
"	"	130726	J13/127	Seedling	Mexico(2)	---	69	76	62	84	56	65	48	---	1411	1290	1194
"	"	"	J13/128	"	"	---	59	77	62	84	56	66	48	---	1411	1298	1194
"	"	131177	J14/3	"	"	---	70	76	61	83	63	73	58	---	1425	1290	1184
"	"	131783	E8/28	Biscoute	France	83	69	80	66	81	68	79	67	1842	1411	1303	1229
"	"	"	D44/37	"	"	84	73	78	68	84	66	72	59	1863	1458	1302	1234
"	"	133545	E12/21	Catherine Ann	Australia	90	73	79	66	90	68	84	60	1892	1458	1303	1229
"	"	"	D46/12A	"	"	---	69	77	62	---	69	77	62	---	1411	1298	1194
"	"	133627	D10/8	Seedling(3)	U.S.S.R.(2)	97	74	77	63	91	68	71	55	1908	1463	1298	1205
"	"	"	E19/39,40	" (D10/8) (3)	"	91	72	79	65	82	68	76	56	1898	1450	1303	1222
"	"	"	G5/37,38	"	"	84	71	77	62	81	64	72	57	1863	1439	1298	1194
"	"	133741	D45/10,11	Lady Palmerston	Australia	84	74	78	62	84	67	78	60	1863	1463	1302	1194
"	"	133982	E9/19	Herholdt's Late Cling	S. Africa	87	71	79	65	81	65	77	56	1874	1439	1303	1222
"	"	"	D45/14A	"	"	---	69	78	64	---	60	74	59	---	1411	1302	1214
"	"	134687	E14/25,26	Red Rose	U.S.A.	81	69	79	63	81	64	75	54	1842	1411	1303	1205
"	"	"	E20/21,22	"	"	91	72	79	67	96	74	77	5	1898	1450	1303	1233
"	"	135867	J15/88	Seedling	India(2)	89	69	82	58	80	60	70	48	1885	1411	1320	1138
"	"	135991	E6/9	Early Alfred	England	86	69	78	64	81	68	76	56	1869	1411	1302	1214
"	"	"	E9/28	"	"	---	69	79	67	81	65	78	66	---	1411	1303	1233
"	"	"	L39/41,42	"	"	84	75	77	65	90	73	75	58	1863	1471	1298	1222
"	"	135993	E8/42,43	Noblesse	"	90	74	79	63	84	70	79	67	1892	1463	1303	1205
"	"	"	D40/23,24	"	"	84	75	77	57	93	74	74	61	1863	1471	1298	1130
"	"	137900	J5/7	Seedling	Iran (2)	92	72	78	59	83	63	75	51	1898	1450	1302	1151
"	"	"	J15/100	"	"	92	70	78	59	83	60	73	51	1898	1425	1302	1151
"	"	137909	J15/121	"	"	91	73	76	61	86	54	69	51	1898	1458	1290	1184
"	"	"	J15/123	"	"	---	73	75	60	36	61	69	51	---	1458	1261	1177
"	"	137910	J15/130	"	"	91	69	78	63	86	64	76	57	1898	1411	1302	1205
"	"	137911	J15/138	"	"	---	69	76	63	86	62	73	54	---	1411	1290	1205
"	"	"	J15/142	"	"	81	69	78	62	86	64	74	57	1898	1411	1302	1194
"	"	138966	E6/23,24	" #11	Argentina(2)	90	66	78	55	81	59	71	55	1892	1401	1302	1222
"	"	141103	J18/104	"	Iran(2)	83	73	79	62	83	65	76	60	1885	1439	1303	1194
"	"	"	J18/107	"	"	83	73	78	62	83	64	75	58	1885	1459	1302	1184
"	"	143740	D41/33,34	Fair's Beauty	U.S.A.	84	75	79	61	90	67	75	57	1863	1471	1303	1284
"	"	143807	E9/16,17	Halate	"	80	68	79	63	81	65	79	56	1897	1403	1303	1205
"	"	"	E10/26	"	"	---	65	79	64	81	65	79	56	---	1411	1303	1234
"	"	143909	E10/11,12	Redelberta(patent)	"	90	68	79	64	81	65	77	52	1892	1403	1303	1234
"	"	144642	E8/31,35	Kette	"	87	68	79	65	81	64	77	54	1874	1403	1303	1222

AVE. BLCCM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE			
					FULL BLOOM				FIRST LEAF				AT OR BELOW 45 F. FROM			
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53	NOV. 1949	UNFIL 1950	FULL 1951	BLOOM 1953
75	144643	E7/14	Zarn	U.S.A.	—	69	79	63	81	64	78	53	—	1411	1303	1205
"	"	D46/14A	"	"	—	—	75	60	—	64	69	56	—	—	1281	1170
"	144662	J4/48	Seedling(3)	China(2)	94	68	75	62	84	63	73	60	1905	1403	1281	1194
"	145064	E8/1	Early Halehaven(patent)	U.S.A.	88	72	79	63	87	68	79	59	1882	1450	1303	1205
"	"	E9/5	"	"	89	69	79	63	81	68	77	60	1885	1411	1303	1205
"	145076	E9/10,18	Michigold	"	90	67	79	65	81	65	81	63	1892	1401	1303	1222
"	145997	P21/22	Seedling	Iran(2)	84	74	79	61	79	65	76	60	1863	1463	1303	1184
"	146001	P22/58	"	"	86	71	80	64	79	65	81	62	1869	1439	1303	1214
"	"	P22/53	" (nect.)	"	86	71	79	63	82	66	78	63	1869	1439	1303	1205
"	146004	P23/53	"	"	88	73	80	59	86	64	76	59	1882	1458	1303	1151
"	"	P23/57	"	"	87	74	80	59	79	65	78	59	1874	1463	1303	1151
"	"	P23/60	"	"	87	74	77	61	79	72	79	60	1874	1463	1298	1184
"	"	P23/61	"	"	86	71	80	63	79	71	78	61	1869	1439	1303	1205
"	"	P23/66	"	"	86	71	80	64	79	65	79	61	1869	1439	1303	1214
"	"	P23/67	"	"	88	69	81	62	79	64	75	59	1882	1411	1312	1194
"	146007	P22/64	"	"	86	71	77	55	79	66	77	63	1869	1439	1298	1222
"	"	P22/65	"	"	87	71	77	54	79	65	77	62	1874	1439	1298	1214
"	146011	P22/27	"	"	87	73	80	61	81	66	77	61	1874	1458	1303	1184
"	146014	P23/21	"	"	86	74	77	64	79	67	74	59	1869	1463	1298	1214
"	"	P23/23	"	"	86	74	76	63	84	69	74	61	1869	1463	1290	1205
"	"	P23/27	"	"	86	74	79	61	82	71	75	59	1869	1463	1303	1184
"	"	P23/29	"	"	84	74	79	62	84	72	78	62	1863	1463	1303	1194
"	"	P23/35	"	"	86	74	78	61	84	76	77	63	1869	1463	1302	1184
"	146016	P20/64	" (nect.)	"	86	71	79	63	81	65	78	62	1869	1439	1303	1205
"	"	P21/1	"	"	86	68	79	65	79	73	79	64	1869	1403	1303	1222
"	146019	P21/51	"	"	89	74	77	61	79	72	80	63	1885	1463	1298	1184
"	"	P21/52	"	"	87	74	77	62	82	71	81	61	1874	1463	1298	1194
"	"	P21/54	"	"	87	71	80	63	79	65	78	62	1874	1439	1303	1205
"	"	P21/55	"	"	87	71	78	67	79	65	80	62	1874	1439	1302	1205
"	146020	P23/4	"	"	86	74	78	67	81	76	76	—	1869	1463	1302	1205
"	146021	P21/7	"	"	86	73	79	62	79	67	79	60	1869	1458	1303	1194
"	"	P21/11	" (nect.)	"	89	68	80	61	84	73	80	62	1885	1403	1303	1184
"	146024	P24/8	"	"	87	76	83	64	81	74	81	63	1874	1471	1326	1214
"	146030	P24/24	"	"	88	71	79	63	81	66	75	60	1882	1439	1303	1205
"	146133	F1/105	Chico 14(3)	India(2)	86	72	78	59	84	59	74	54	1869	1450	1302	1151
"	"	D45/34A	" " "	"	—	69	80	65	—	60	71	55	—	1411	1303	1222
"	146237	F4/36	North Caucasus #10 (3)	U.S.S.R.(2)	91	71	77	62	84	74	72	58	1898	1439	1298	1194
"	146242	G3/17,18	" " #15 "	"	87	68	79	67	87	80	79	61	1874	1403	1303	1233
"	146247	F4/2	" " #20 "	"	87	69	79	66	87	65	79	61	1874	1411	1303	1229
"	148619	F24/36	Seedling	Iran(2)	91	69	78	62	79	65	75	62	1898	1411	1302	1194
"	148620	P24/41	"	"	90	69	78	62	84	65	75	60	1892	1411	1302	1194
"	148624	P24/61	" (nect.)	"	86	71	81	60	79	59	77	58	1869	1439	1312	1170
"	"	P24/63	"	"	88	74	79	60	81	58	78	59	1882	1463	1303	1170
"	"	P24/65	"	"	86	72	79	61	79	59	79	59	1869	1450	1303	1184
"	151626	D45/33,34	Beltsville #2-222L	U.S.A.	84	75	78	62	79	64	72	57	1863	1471	1302	1194
"	151628	D45/35,36	" #329	"	84	70	78	66	79	62	70	57	1863	1425	1302	1229
"	151637	D46/6	" #7426A	"	84	70	77	64	79	67	77	58	1863	1458	1298	1214
"	151652	D46/28,29	Sunday	"	84	74	78	62	79	67	73	56	1863	1463	1302	1194
"	151654	D46/30,31	Vivid Gold	"	84	75	78	60	79	63	73	57	1863	1471	1302	1205
"	151718	D46/32	Dixied	"	84	74	79	64	81	64	74	59	1863	1463	1303	1214
"	152149	D46/33,34	F.B. 9-40	"	84	74	79	63	79	68	75	59	1863	1463	1303	1205
"	153810	D45/42A	Sunrise	"	—	69	78	66	—	64	79	61	—	1411	1302	1229
"	"	D47/2	"	"	84	75	77	60	81	67	74	58	1863	1471	1298	1214

AVE. ELOOM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45° F. FROM			
					FULL BLOOM				FIRST LEAF				NOV. 1 UNTIL FULL ELOOM			
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53	1949	1950	1951	1953
75	20496L	G3/43,44	Seedling (OA-51) (3)	India (2)	87	73	78	63	84	71	79	60	1874	1458	1302	1205
"	20496F	J1/138	" (3)	" "	95	72	75	59	88	56	65	47	1908	1450	1281	1151
76	C-27166	D39/39,40	Leeton	U.S.A.	84	74	78	69	92	68	78	62	1863	1463	1302	1234
"	C-27167	D39/35,36	Penryn	"	84	77	77	65	91	79	76	66	1863	1471	1298	1222
"	24807	E6/43	Hansen Free	Turkestan (2)	90	69	79	65	90	68	78	54	1892	1411	1302	1222
"	43179	E4/1,2	Late Champion	New Zealand	90	71	78	63	86	68	76	55	1892	1450	1302	1205
"	43137	E4/7,8	Up-to-Date	"	90	70	78	64	84	68	76	56	1892	1425	1302	1214
"	55813	E2/3,4	Freemax Free	U.S.A. (2)	88	73	78	65	85	72	79	65	1882	1458	1302	1222
"	55885	E4/15,16	Yunnan	China (2)	90	73	78	63	89	68	77	53	1892	1458	1302	1205
"	55886	E4/17,18	"	"	90	73	78	62	90	84	78	54	1892	1458	1302	1205
"	55888	E4/19,20	"	"	90	72	78	61	84	72	76	54	1892	1458	1302	1184
"	72094	"	Hsueh Tao	"	81	72	83	68	89	68	78	57	1842	1450	1326	1234
"	7854E	E13/38	Giallona Di Napoli O	Italy	87	76	79	63	90	68	77	59	1874	1471	1303	1205
"	88545	D25/2	Terzarda Cavallera	Italy	87	76	79	63	90	68	77	59	1874	1471	1303	1205
"	"	D44/28A,29A	Golden King	New Zealand	98	73	73	65	91	78	76	67	1912	1458	1273	1222
"	"	"	"	"	---	69	7	57	---	55	75	60	---	1411	1298	1130
"	88557	E8/29,30	Wright's Bountiful	"	90	69	79	67	90	65	79	63	1892	1411	1303	1229
"	88561	D44/32	Dargaville (neob.)	"	---	74	77	60	---	63	72	57	---	1462	1298	1170
"	"	E24/2	"	"	92	72	80	66	85	68	78	55	1898	1450	1303	1229
"	95501	E16/5,6	Seedling (E103/12)	China (2)	90	69	80	65	89	76	79	59	1892	1411	1303	1222
"	99243	D1/17,18	Dripstone	Australia	96	71	76	65	87	55	67	61	1932	1439	1290	1229
"	"	E15/13,14	"	"	88	69	75	63	81	65	77	56	1882	1411	1303	1205
"	101827	E6/13,14	De Reus	Morocco	86	72	82	63	88	72	81	63	1869	1450	1320	1205
"	101830	E6/19,20	Infante Elizabeth	"	90	69	78	65	90	71	78	66	1892	1411	1302	1222
"	105058	F2/126	Seedling	U.S.S.R. (2)	91	72	77	65	84	77	78	59	1898	1450	1298	1222
"	105067	F3/33	"	"	87	73	79	63	87	71	78	62	1874	1458	1303	1205
"	105109	E10/29	Alexis Lepere	Italy	---	76	80	66	92	84	80	67	---	1471	1303	1229
"	"	D44/39A,40A	"	"	---	72	77	67	---	67	78	66	---	1450	1298	1234
"	105465	F4/47	Seedling	Argentina	88	72	79	64	84	66	72	58	1882	1439	1303	1204
"	105850	E11/38,39	Roger Louis	Australia	83	72	79	63	90	75	84	68	1882	1450	1303	1205
"	107838	F4/94	Sdlg. of Mao tao	China (2)	87	73	79	65	84	69	76	59	1874	1458	1303	1222
"	"	F4/86	"	"	87	73	80	65	87	74	76	60	1874	1458	1303	1222
"	"	F4/88	"	"	87	72	79	66	84	69	78	61	1874	1450	1303	1229
"	"	F4/98	"	"	87	73	79	64	87	71	77	60	1874	1458	1303	1214
"	"	J1/105	"	"	---	72	80	63	88	82	78	62	---	1450	1303	1205
"	"	J1/108	"	"	---	72	79	64	92	68	80	63	---	1450	1303	1214
"	110202	E2/31,32	Perla di Zolia	Italy	87	75	79	63	89	72	78	64	1874	1471	1303	1205
"	110267	F4/65	Seedling	Brazil	---	74	76	63	84	63	67	56	---	1463	1290	1205
"	111838	E24/35,36	Rivers Orange (neob.)	Australia	88	72	80	64	89	77	80	57	1882	1450	1303	1214
"	112033	E8/9,10	Saharanpur	India	90	68	70	65	89	58	79	54	1892	1403	1303	1222
"	125015	E18/21,22	Kalhaven	U.S.A.	90	72	79	---	82	68	79	56	1892	1450	1303	---
"	129808	E18/41,42	Via Ora	Australia	---	70	30	63	86	68	77	54	1885	1425	1303	1205
"	130725	J13/125	Seedling	Mexico (2)	---	75	76	61	80	59	74	52	1905	1471	1290	1184
"	130729	J13/134	"	"	---	75	75	62	82	59	71	51	---	1458	1290	1194
"	130934	E11/16,17	Afterglow	U.S.A.	90	68	67	64	87	65	79	57	1892	1403	1303	1214
"	130980	E5/10,11	Proskauer	Germany	87	74	77	65	81	68	80	64	1869	1458	1303	1222
"	131177	J14/4	Seedling	Mexico (2)	---	67	80	60	85	62	75	58	---	1403	1326	1170
"	131514	E11/1	Belle Home Pinout	France	85	76	80	66	83	76	79	63	1882	1471	1303	1229
"	"	D44/30	"	"	94	75	77	65	82	67	75	62	1863	1439	1298	1222
"	131790	E9/11	Girard Jauno	"	86	75	85	65	81	65	79	67	1882	1471	1303	1222
"	"	D44/45A	"	"	---	69	75	68	---	64	75	62	---	1411	1281	1234

AVE. BLOOM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45°F. FROM			
					FULL BLOOM				FIRST LEAF				NOV. 1 1949	UNTIL 1950	FULL 1951	BLOOM 1953
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53				
76	131791	D39/28,29	Grosse d'Italie	France	84	76	77	65	91	69	78	59	1863	1471	1298	1222
"	131796	E4/3	Madeleine Rouge	"	90	69	78	65	86	68	78	56	1892	1411	1302	1222
"	"	D45/6A	"	"	—	69	77	66	—	66	77	60	—	1411	1298	1229
"	132007	D44/40	Rheingold	Germany	—	71	77	66	84	66	79	61	—	1439	1298	1229
"	132175	J14/37	Seedling	U.S.S.R. (2)	89	76	77	62	80	72	73	60	1885	1471	1298	1194
"	132535	D44/41	Late Admirable	England	84	76	77	68	84	68	75	62	1863	1471	1298	1234
"	132552	D39/20	Blutnektarine (neot.)	Germany	85	76	77	65	91	79	78	57	1869	1471	1298	1222
"	133501	D39/30	Elberta Camden	Australia	84	78	79	66	91	84	78	65	1863	1471	1303	1229
"	"	D45/12A	"	"	—	71	80	65	—	66	78	62	—	1439	1303	1222
"	133550	E12/29,30	Peak Cling	"	89	69	79	65	85	68	77	58	1885	1411	1303	1222
"	133743	E12/37,38	Riverside	"	89	71	80	65	88	65	77	55	1885	1439	1303	1222
"	133869	E8/27	White Elberta	New Zealand	90	69	79	64	90	68	71	55	1892	1411	1303	1214
"	"	E20/15	"	"	91	72	79	64	82	65	77	55	1898	1450	1303	1214
"	133987	E8/17,18	Noonien's Herholdt's	Strain S.Africa	90	72	78	64	84	65	71	54	1892	1450	1302	1214
"	134150	E4/9,10	Sdlg. of Bresquillo	Duraznos (3)												
"	"	"	"	Spain (2)	90	72	78	63	90	75	78	61	1892	1450	1302	1205
"	134302	G3/45,46	Seedling(D25/25)(3)	S.Africa(2)	87	73	80	62	86	70	77	59	1874	1458	1303	1194
"	134689	E20/25,26	Pacemaker	U.S.A.	89	72	80	64	87	68	77	56	1885	1450	1303	1214
"	135694	J15/68	Seedling	Afghanistan(2)	89	69	83	64	84	62	73	60	1885	1411	1326	1214
"	"	J15/71	"	"	89	66	84	63	84	60	74	60	1885	1401	1328	1205
"	135866	J19/97	"	India (2)	—	71	78	60	83	60	75	59	—	1439	1302	1170
"	"	J19/106	"	"	94	71	78	59	83	60	74	48	1908	1439	1302	1151
"	"	J19/120	"	"	—	71	78	62	90	60	75	57	—	1439	1302	1194
"	"	J19/123	"	"	92	71	77	64	84	63	73	60	1898	1439	1298	1214
"	"	J19/126	"	"	92	73	77	60	86	63	74	57	1898	1458	1298	1170
"	"	J19/129	"	"	90	73	76	63	85	64	73	62	1892	1458	1290	1205
"	135994	E4/38,41	A.persica foliis purpureis	England	86	74	79	66	81	68	81	66	1869	1463	1303	1229
"	136146	D39/15	Chilon	France	84	69	77	66	84	64	73	55	1863	1411	1298	1229
"	"	D40/37	"	"	89	78	80	68	92	76	80	60	1885	1471	1303	1234
"	136154	D41/30	Triumpholicio	"	84	76	78	68	91	85	78	61	1863	1471	1302	1234
"	"	D45/21A	"	"	—	74	78	67	—	65	80	64	—	1463	1302	1233
"	137908	J15/93	Seedling	Iran(2)	91	74	78	60	82	61	73	52	1898	1463	1302	1170
"	"	J15/99	"	"	92	73	78	60	83	61	73	52	1898	1458	1302	1170
"	"	J15/118	"	"	—	76	78	62	86	66	74	53	—	1471	1302	1194
"	137910	J15/129	"	"	—	74	78	63	86	65	74	57	—	1463	1302	1205
"	137911	J15/137	"	"	93	69	76	64	86	65	73	55	1905	1411	1290	1214
"	137912	J16/2	"	"	89	74	78	64	83	63	74	52	1885	1463	1302	1214
"	141091	J16/65	"	"	89	72	78	63	83	64	77	58	1885	1450	1302	1205
"	141094	J17/81	"	"	88	76	79	60	83	65	75	56	1885	1471	1303	1170
"	141102	J18/109	"	"	89	74	79	62	82	66	77	59	1885	1463	1303	1194
"	"	J18/113	"	"	89	74	—	63	83	63	77	58	1885	1463	—	1205
"	141103	J18/105	"	"	89	73	78	62	83	64	74	59	1885	1458	1302	1205
"	"	J18/106	"	"	89	73	78	62	83	64	76	60	1885	1458	1302	1194
"	141108	J18/124	"	"	89	73	—	64	84	65	79	60	1885	1458	—	1214
"	141111	J18/73	"	"	89	74	—	64	83	63	77	65	1885	1463	—	1214
"	141119	JH/56	(Neot.)	"	93	74	78	60	84	73	77	59	1905	1463	1302	1170
"	"	JH/62	"	"	93	74	78	60	87	78	77	59	1905	1463	1302	1151
"	142235	E7/3,4	Vee Freeze	Canada	—	72	80	62	84	72	79	56	—	1450	1303	1205
"	144651	J4/46	Seedling(3)	China(2)	92	67	82	61	88	65	73	62	1898	1401	1320	1184
"	146001	P22/57	"	Iran(2)	86	73	79	65	79	65	80	60	1869	1458	1303	1222
"	"	P22/59	"	"	86	74	79	61	79	66	78	60	1869	1463	1303	1205
"	"	P22/60	"	"	86	74	80	63	82	68	79	61	1869	1463	1303	1205
"	"	P22/62	"	"	86	74	72	64	81	68	77	61	1869	1463	1303	1214
"	146002	P23/12	"	"	87	74	80	61	79	64	73	59	1874	1463	1303	1205

AVE. BLOOM INDEX	P. I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45°F. FROM			
					FULL BLOOM				FIRST LEAF				NOV. 1	UNTIL	FULL	BLOOM
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53				
76	146002	P23/13	Seedling	Iran(2)	87	74	80	64	79	65	77	61	1874	1463	1303	1214
"	146004	P23/55	"	" "	91	73	77	61	88	66	78	62	1898	1458	1298	1184
"	"	P23/56	"	" "	89	74	80	60	79	65	79	61	1885	1463	1303	1170
"	146005	P23/16	"	" "	86	74	78	66	82	69	79	63	1869	1463	1302	1229
"	146010	P22/7	"	" "	89	74	76	66	79	72	73	62	1885	1463	1290	1229
"	"	P22/8	"	" "	89	74	75	64	79	67	71	61	1885	1463	1281	1214
"	146011	P22/25	"	" "	87	71	82	63	81	66	77	61	1874	1439	1320	1205
"	"	P22/26	"	" "	89	74	79	62	84	76	84	61	1885	1463	1303	1194
"	146014	P23/25	"	" "	87	74	80	64	82	67	79	59	1874	1463	1303	1214
"	"	P23/33	"	" "	88	73	79	64	84	74	74	61	1882	1458	1303	1214
"	146015	P21/67	" (neot.)	" "	87	73	78	65	81	62	79	60	1874	1458	1302	1222
"	"	P21/68	" "	" "	87	73	78	67	82	65	79	66	1874	1458	1302	1233
"	"	P21/69	" "	" "	87	73	79	66	79	62	79	61	1874	1458	1303	1229
"	146016	P20/62	" "	" "	89	73	80	63	81	65	78	62	1885	1458	1303	1205
"	146017	P21/50	" "	" "	90	74	78	61	81	68	79	62	1892	1463	1302	1184
"	146018	P24/6	" "	" "	89	69	80	64	81	65	75	61	1885	1411	1303	1214
"	146019	P21/53	" (neot.)	" "	89	73	80	61	79	68	79	62	1885	1458	1303	1184
"	146027	P20/43	" "	" "	86	71	80	65	86	65	82	---	1869	1439	1303	1222
"	"	P20/44	" "	" "	86	71	80	65	86	66	84	---	1869	1439	1303	1222
"	"	P20/45	" "	" "	85	71	80	65	84	65	83	---	1869	1439	1303	1222
"	"	P20/46	" "	" "	85	74	79	62	86	66	83	---	1869	1463	1303	1214
"	"	P20/47	" "	" "	86	74	81	63	84	65	82	65	1869	1463	1312	1205
"	146031	P24/10	" "	" "	89	71	77	67	82	77	77	62	1882	1439	1298	1233
"	146229	F4/4	North Caucasus #2(3)	U.S.S.R.(2)	87	73	79	64	87	67	77	59	1874	1458	1303	1214
"	146233	G6/11,12	" " 6 "	" "	87	73	78	66	87	69	78	59	1874	1458	1302	1229
"	146240	F4/31	" " 13 "	" "	91	73	78	62	84	71	72	58	1896	1433	1302	1194
"	146241	F4/33	" " 14 "	" "	91	73	78	63	84	78	77	60	1898	1458	1302	1205
"	146248	F4/25	" " 21 "	" "	92	73	75	63	83	69	77	59	1898	1458	1281	1205
"	148619	P24/67	Seedling	Iran(2)	87	74	80	61	81	62	80	60	1874	1463	1302	1184
"	148620	P24/42	"	" "	81	71	81	61	84	65	80	61	1898	143	1312	1184
"	150774	E15/3,4	Redskin	U.S.A.	86	69	80	65	81	65	77	54	1882	1411	1303	1222
"	151630	D45/41,42	Beltville #3705	"	84	76	77	66	84	70	74	60	1863	1471	1298	1229
"	151648	D46/12,13	Golden Heath	"	84	75	77	67	77	64	72	59	1862	1471	1298	1233
"	152148	D45/41A	Beltville #8639	"	---	73	78	65	---	64	77	60	---	1439	1302	1229
"	204967	J4/45	Seedling (3)	India(2)	98	67	82	60	88	56	69	50	1912	1401	1320	1170
"	"	G4/50,51	" (34-145)(3)	" "	87	73	78	60	84	62	73	52	1874	1458	1302	1170
77	C-26637	N6/1	Sellers Orange	U.S.A.	86	86	77	60	81	67	75	57	1869	1506	1298	1170
"	C-26645	N8/7	St. John	"	84	82	77	63	81	68	76	60	1863	1489	1298	1205
"	C-26651	N10/5,7	Gower (neot.)	"	87	81	77	60	81	68	78	59	1874	1489	1298	1170
"	"	E8/24	" "	"	88	76	80	67	88	68	79	66	1882	1471	1302	1233
"	C-26894	N4/2,3	Sullivan	"	84	82	73	63	79	69	78	60	1863	1489	1302	1205
"	C-27124	E8/25	Libbes	"	90	76	80	66	90	72	79	66	1892	1471	1303	1229
"	"	N16/3	"	"	87	---	78	61	84	70	79	61	1874	---	1302	1184
"	43346	E24/21,22	Surecrop(neot.)	New Zealand	88	74	80	64	89	68	79	55	1882	1463	1303	1214
"	43568	E13/34,35	Sdg. of Tardio Encarnado	Spain(2)	90	76	79	62	90	76	84	58	1892	1471	1303	1214
"	65978	E23/24,25	Regina Vittoria (neot.)	Italy	90	72	79	65	88	79	79	56	1892	1450	1303	1222
"	76544	E16/1,2	Terzarda Col. Pizzo	"	90	74	80	62	91	79	84	69	1892	1463	1303	1194
"	82648	E96/9	Seedling	U.S.S.R.(2)	86	71	78	---	86	74	76	---	1869	1463	1290	---
"	"	G4/48,49	" (E96/9)	" "	87	74	79	72	87	70	75	---	1874	1463	1303	1251

AVE. BLOOM INDEX	P. I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45°F. FROM			
					FULL BLOOM				FIRST LEAF				NOV. 1 UNTIL FULL BLOOM			
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53	1949	1950	1951	1953
77	88559	D25/12	Wright's Midseason	New Zealand	98	74	73	68	91	69	75	—	1912	1463	1273	1234
"	"	E18/3,4	"	"	91	68	79	64	86	72	79	57	1898	1403	1303	1214
"	102534	E9/6,7	Topazio	Italy	90	72	79	65	90	68	79	60	1892	1450	1303	1222
"	104315	F3/125	North Caucasus	U.S.S.R.(2)	91	74	79	65	84	84	76	72	1898	1463	1303	1222
"	104489	E10/23,24	Gialla Tardiva di Milano	Italy	91	70	79	66	87	65	79	56	1898	1425	1303	1229
"	104492	E2/21,22	Santa Caterina	"	87	75	83	63	87	68	78	59	1874	1471	1326	1205
"	105063	F3/90	Seedling	U.S.S.R.(2)	90	72	80	65	87	78	79	62	1892	1450	1303	1222
"	107838	F4/91	" of Mao tao	China(2)	89	74	79	65	84	84	77	60	1885	1463	1303	1222
"	109793	F4/102	Ferganensis Seedling	U.S.S.R.(2)	87	73	78	66	87	69	77	60	1874	1458	1302	1229
"	"	G4/44,45	" (F4/102)	"	92	74	78	71	87	68	79	63	1898	1463	1302	1238
"	"	F4/103	"	"	87	73	79	66	84	69	77	61	1874	1458	1303	1229
"	"	G4/25	" (F4/103)	"	87	73	78	71	84	71	78	63	1874	1458	1302	1238
"	111916	E18/17,18	Camden Golden	Australia	89	76	80	62	86	68	79	56	1885	1471	1303	1194
"	113457	E25/2	Red Nectarina (nect.)	U.S.S.R.	89	72	80	65	86	68	80	57	1885	1450	1303	1222
"	119839	E14/7,8	Shirin Danak	Turkestan	83	76	80	67	90	80	85	55	1855	1471	1303	1233
"	124924	J5/41	Seedling	Mexico(2)	—	83	75	61	88	63	79	61	—	1493	1281	1184
"	125017	E25/5,6	Sary Oiler (nect.)	U.S.S.R.	90	72	80	64	82	79	78	57	1892	1450	1303	1214
"	125103	E14/29,30,31	Primrose	U.S.A.	88	72	81	66	87	64	74	55	1882	1450	1312	1229
"	129601	E25/13,14	Albert Victor (nect.)	Australia	88	72	80	66	86	72	80	59	1882	1450	1303	1229
"	129677	E18/31,32	Sea Eagle	S. Africa	90	69	81	68	87	75	84	61	1892	1411	1312	1234
"	130894	D44/27,28	Alexander Noblesse	England	84	78	81	66	84	69	78	68	1863	1471	1312	1229
"	130935	E11/18,19	Golden East	U.S.A.	90	73	80	67	88	70	79	56	1892	1458	1303	1233
"	"	E13/26,27	"	"	90	73	80	66	81	64	78	57	1892	1458	1303	1229
"	131780	D39/16,17	Angevine Tardive	France	85	75	80	67	91	69	77	56	1869	1471	1303	1233
"	131800	E19/33,34	Wallas	"	91	73	79	64	84	76	77	57	1898	1458	1303	1214
"	131802	E7/9,10	Port St.Marie (nect.)	"	—	72	81	65	87	68	79	56	—	1450	1312	1222
"	131813	E6/35	Aribaud	"	90	84	79	66	84	84	81	65	1892	1502	1303	1229
"	"	D45/7A	"	"	—	67	77	65	—	65	78	65	—	1401	1298	1229
"	133503	E12/11,12	Italian Slip	Australia	90	74	80	64	83	70	80	56	1892	1463	1303	1214
"	133507	E12/15,16	Meteor	"	90	76	79	64	90	68	84	60	1892	1471	1303	1214
"	133746	E12/39,40	Wright's Early	"	90	72	80	65	89	72	84	58	1892	1450	1303	1222
"	133844	E95/26	Seedling (3)	Turkestan(2)	83	74	81	62	89	79	82	—	1855	1463	1312	1194
"	"	E19/41,42	" (E95/26) (3)	"	91	72	81	69	88	79	85	—	1898	1450	1312	1234
"	"	D45/12,13	"	"	84	74	79	65	84	71	78	62	1863	1463	1303	1222
"	133847	E13/16,17	Free Queen	New Zealand	88	74	79	66	87	72	79	57	1882	1463	1303	1229
"	133849	E13/18,19	Golden Honey Freestone	"	86	74	79	68	90	68	84	55	1869	1463	1303	1234
"	133974	J14/42	Seedling of Aru	Punjab, India	89	77	77	62	80	63	74	61	1885	1471	1298	1194
"	133984	E9/35	Marina	S. Africa	90	76	80	63	87	72	79	67	1892	1471	1303	1205
"	"	D45/20	"	"	84	76	77	65	84	65	75	66	1863	1471	1298	1222
"	134151	D9/3	Seedling (3)	" (2)	97	78	76	65	92	66	71	55	1908	1471	1290	1222
"	"	E20/1,2	" (D9/3) (3)	"	91	74	78	58	88	68	70	53	1898	1463	1302	1138
"	134690	E20/27,28	White Hale	U.S.A.	91	72	80	63	86	68	77	56	1898	1450	1303	1205
"	135694	J15/77	Seedling	Afghanistan(2)	93	74	78	61	83	60	73	59	1905	1463	1302	1184
"	135866	J19/96	"	India(2)	94	73	78	64	83	62	78	60	1908	1458	1302	1214
"	"	J19/109	"	"	92	74	78	64	84	62	79	64	1898	1463	1302	1214
"	"	J19/119	"	"	92	73	79	—	82	62	73	—	1898	1458	1303	—
"	135867	J15/81	"	"	89	74	86	59	80	60	73	48	1885	1463	1341	1170
"	136151	D45/22,23	La Plus Precoce de Saumachez	France	84	76	78	68	84	68	79	68	1863	1471	1302	1234

AVE. BLOOM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE			
					FULL BLOOM				FIRST LEAF				AT OR BELOW 45°F. FROM			
					49	19	19	19	49	19	19	19	NOV. 1	UNTIL	FULL	1953
77	137908	J15/92	Seedling	Iran (2)	—	76	80	59	84	62	74	52	—	1471	1303	1151
"	"	J15/101	"	"	94	69	82	61	83	61	74	52	1908	1411	1320	1184
"	"	J15/111	"	"	89	76	79	63	83	64	75	53	1885	1471	1303	1205
"	"	J15/113	"	"	92	75	77	62	86	63	73	54	1898	1471	1298	1194
"	"	J15/116	"	"	95	74	77	62	84	61	73	52	1908	1463	1298	1194
"	137910	J15/127	"	"	—	75	78	63	86	65	77	55	—	1471	1302	1205
"	"	J15/131	"	"	91	74	79	64	86	65	75	58	1898	1463	1303	1214
"	137911	J15/140	"	"	91	74	77	64	86	61	73	58	1898	1463	1302	1214
"	137913	J16/23	"	"	—	74	78	66	83	65	76	62	—	1463	1302	1229
"	137914	J16/27	"	"	—	74	79	64	83	63	74	59	—	1463	1303	1214
"	"	J16/31	"	"	—	74	78	65	83	64	74	59	—	1463	1302	1229
"	141086	J18/36	"	"	89	76	79	65	83	60	76	61	1885	1471	1303	1222
"	"	J18/39	"	"	89	74	79	64	82	62	76	60	1895	1463	1303	1214
"	141094	J16/86	"	"	92	74	79	64	83	65	75	62	1898	1463	1303	1214
"	"	J17/78	"	"	88	74	82	62	81	64	76	57	1882	1463	1320	1194
"	141101	JJ/7	"	"	—	76	77	64	81	64	72	60	—	1471	1298	1214
"	141102	J16/137	"	"	88	76	78	65	83	66	75	62	1882	1471	1302	1222
"	141109	JH/1	"	"	91	73	—	64	89	64	79	63	1898	1458	—	1214
"	141119	JH/51	" (neot.)	"	93	74	78	62	87	69	76	59	1905	1463	1302	1194
"	"	JH/59	"	"	94	74	80	61	87	73	76	60	1907	1463	1303	1184
"	"	JH/64	"	"	93	76	78	61	87	79	76	58	1905	1471	1302	1184
"	143345	J1/89	"	"	94	74	78	63	87	61	75	58	1908	1463	1302	1205
"	143828	E8/36,37	Late Rose	U.S.A.	90	72	79	66	81	66	79	55	1892	1450	1303	1229
"	143905	E8/11,12	Fertile Hale	"	90	70	81	68	86	68	79	64	1892	1425	1312	1234
"	146000	P22/18	Seedling	Iran(2)	90	74	80	62	82	65	76	64	1892	1458	1303	1194
"	146001	P22/61	"	"	87	76	81	65	82	75	81	61	1874	1471	1312	1222
"	146002	P23/11	"	"	90	74	79	63	79	65	73	59	1892	1463	1303	1205
"	146005	P23/14	"	"	87	76	79	66	81	76	79	61	1874	1471	1303	1229
"	"	P23/17	"	"	87	76	80	64	84	66	79	63	1874	1471	1303	1214
"	"	P23/19	"	"	85	74	81	65	79	79	82	61	1869	1463	1312	1222
"	146007	P22/66	"	"	87	74	80	66	81	65	79	63	1874	1463	1303	1229
"	146011	P22/28	"	"	91	74	80	62	81	76	77	60	1898	1463	1303	1194
"	145014	P23/22	"	"	88	74	80	64	82	72	79	62	1882	1463	1303	1214
"	"	P23/28	"	"	88	76	80	63	84	73	76	60	1882	1471	1303	1205
"	"	P23/34	"	"	88	76	80	64	82	76	79	62	1882	1471	1303	1205
"	146015	P21/65	" (neot.)	"	87	73	81	65	81	62	80	61	1874	1458	1312	1222
"	146016	P20/61	"	"	89	74	80	63	81	66	78	62	1885	1463	1303	1205
"	146018	P24/1	"	"	90	71	80	66	79	66	75	59	1892	1439	1303	1229
"	"	P24/2	"	"	90	74	80	65	79	66	78	59	1892	1463	1303	1222
"	"	P24/4	"	"	90	71	79	66	79	65	74	60	1892	1439	1303	1229
"	"	P24/5	"	"	89	76	79	65	79	65	75	61	1885	1471	1303	1222
"	146019	P21/56	"	"	91	74	80	63	79	66	81	63	1898	1463	1303	1205
"	146020	P23/7	"	"	87	76	82	73	82	83	82	54	1874	1471	1326	1259
"	146027	P20/43	"	"	90	74	79	66	86	65	83	66	1892	1463	1303	1229
"	"	P20/57	"	"	86	76	82	63	84	71	80	65	1869	1471	1320	1205
"	146030	P24/19	"	"	88	74	82	65	79	66	77	62	1882	1463	1320	1222
"	146031	P24/13	"	"	90	69	80	69	82	72	78	60	1892	1411	1303	1234
"	146032	P22/43	"	"	86	74	80	68	81	64	82	61	1869	1463	1303	1234
"	"	P22/45	"	"	86	72	79	68	84	64	79	61	1869	1463	1303	1234

AVE. BLOOM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE			
					FULL BLOOM				FIRST LEAF				AT OR BELOW 45°F. FROM			
					19	19	19	19	19	19	19	19	NOV. 1949	UNTIL 1950	FULL BLOOM 1951	UNTIL 1953
77	146032	P22/48	Seedling (neot.)	Iran (2)	86	74	80	69	84	65	80	61	1869	1463	1303	1234
"	"	P22/56	" "	" "	86	74	79	70	81	65	80	63	1869	1463	1303	1234
"	146034	P21/57	" "	" "	87	79	82	60	82	65	80	63	1874	1475	1320	1170
"	"	P21/58	" "	" "	87	78	82	60	84	67	79	63	1874	1471	1320	1170
"	"	P21/59	" "	" "	87	78	81	60	84	66	80	64	1874	1471	1312	1170
"	"	P21/61	" "	" "	87	80	81	61	84	78	81	63	1874	1476	1312	1184
"	146035	P24/28	" "	" "	91	7	81	61	84	56	80	62	1898	1471	1312	1184
"	"	P24/29	" "	" "	92	76	77	62	84	66	7	59	1898	1471	1298	1194
"	146137	F2/95	Chico 18 (3)	U.S.S.R.(2)	91	72	79	67	83	73	76	60	1898	1450	1303	1233
"	146228	F4/16	North Caucasus #1(3)	" "	90	73	79	66	83	63	78	59	1892	1458	1303	1229
"	146234	F4/32	" "	" "	91	73	79	63	84	78	76	59	1898	1458	1303	1205
"	146238	G3/25,26	" "	" "	89	76	79	65	84	81	79	67	1885	1471	1303	1222
"	146239	F3/128	" "	" "	91	74	79	65	87	82	77	60	1898	1463	1303	1222
"	146239	G3/22	" "	" "	91	74	79	65	84	76	78	61	1898	1463	1303	1222
"	146252	G3/15,16	" "	" "	87	73	80	69	87	82	78	65	1874	1458	1303	1234
"	148267	E13/42,43	Lizzie	U.S.A.	90	72	81	—	81	68	79	57	1892	1450	1312	—
"	148619	P24/37	Seedling	Iran (2)	91	76	80	61	79	67	77	63	1898	1471	1303	1184
"	148620	P24/49	" "	" "	9	71	83	63	81	65	76	62	1892	1439	1326	1205
"	151631	D46/2,3	Beltsville #12156	U.S.A.	84	78	77	69	80	64	72	60	1863	1471	1298	1234
78	C-25875	N1/8	Peaks	" "	86	89	77	60	81	73	76	58	1869	1526	1298	1170
"	C-25878	N2/5,6	Lovell	" "	86	84	78	62	79	68	77	58	1869	1502	1302	1194
"	C-26639	N7/1,2	Early Crawford	" "	88	83	81	61	83	69	83	62	1882	1493	1312	1184
"	C-26643	N8/3,4	Tuscan	" "	88	81	81	62	82	67	76	60	1882	1467	1312	1194
"	C-27153	D40/19	Eclipse	" "	89	76	79	66	91	74	75	57	1885	1471	1303	1229
"	C-27156	D40/43	Florence	" "	84	78	82	67	91	81	80	62	1863	1471	1320	1233
"	C-27157	D39/31,32	June Elberta	" "	91	77	79	65	91	73	78	58	1898	1471	1303	1222
"	68354	E4/27,28	Goodman's Choice	Australia	90	75	83	65	90	83	78	66	1892	1471	1326	1222
"	88563	E24/7	Gold (neot.)	New Zealand	91	77	81	64	90	77	79	66	1898	1471	1312	1214
"	101823	E6/6	Bienvenida	Morocco	86	75	83	66	87	86	83	67	1869	1471	1326	1229
"	104287	E8/5,6	Soleil d'Octobre	" "	90	76	80	65	87	68	79	65	1892	1471	1303	1222
"	104487	E10/19,20	Di Verona	Italy	91	73	79	68	90	76	79	55	1898	1471	1303	1234
"	104488	E10/21,22	Gaschina Novembre	" "	91	76	79	64	87	65	79	56	1898	1471	1303	1214
"	105055	F2/2	Seedling	U.S.S.R.(2)	91	74	79	68	89	71	79	59	1898	1463	1303	1234
"	"	F2/3	" "	" "	91	74	79	68	89	69	79	60	1898	1463	1303	1234
"	105059	F2/129	" "	" "	91	74	80	65	84	79	78	59	1898	1463	1303	1222
"	105373	E11/24,25	Poppa di Venere Tardive	Italy	89	76	80	65	88	68	79	57	1885	1471	1303	1222
"	105374	E11/26,27	Re Umberto	" "	90	72	79	69	90	80	79	58	1892	1450	1303	1234
"	107838	F4/99	Seedling of Mao tao	China (2)	87	73	79	73	84	71	76	66	1874	1458	1303	1259
"	111837	E24/17,18	Masterpiece (neot.)	Australia	89	76	80	66	87	69	76	55	1885	1471	1303	1229
"	111923	E24/37,38	Ben's Riok	" "	86	80	80	67	91	79	80	59	1869	1476	1303	1233
"	111925	E5/42,43	Newington	" "	90	75	82	66	84	72	89	64	1892	1471	1320	1229
"	122165	J4/49	Seedling	India (2)	95	79	83	63	91	65	75	64	1908	1475	1326	1205
"	"	E7/29	" (J4/49)	" "	90	69	79	68	81	61	79	63	1892	1411	1303	1234
"	125570	J4/58	" "	Afghanistan(2)	94	74	81	62	88	65	77	60	1908	1463	1312	1194
"	125572	J4/64	" "	" "	95	72	81	63	88	65	79	62	1908	1450	1312	1205
"	125573	G6/13,14	" cf Shaftala(OD/84)	" "	87	74	79	71	87	72	75	60	1874	1463	1303	1238
"	125574	J4/92	" "	" "	96	71	82	63	88	65	81	62	1908	1450	1320	1205
"	126553	E3/21,22	Delicious	U.S.A.	89	75	81	67	86	75	78	55	1885	1471	1312	1233
"	126557	E3/17,18	Radiance	" "	89	78	80	66	86	68	78	56	1885	1471	1303	1229
"	126563	E3/3,4	South Haven	" "	89	74	83	67	89	83	83	67	1885	1463	1326	1233
"	129806	E18/37,38	Gold Dust	Australia	88	76	79	67	89	74	79	62	1882	1471	1303	1233



AVE. BLOOM INDEX	P. I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45°F. FROM			
					FULL BLOOM				FIRST LEAF				NOV. 1 1949	UNTIL 1950	FULL 1951	BLOOM 1953
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53				
78	129815	E19/3,4	Thiele's Cling	Australia	89	79	80	65	86	68	79	57	1885	1475	1303	1222
"	131473	E11/41,42	Grosse Madeleine	France	90	72	80	70	90	72	79	67	1892	1450	1303	1234
"	131794	E6/31	Juliette de Saumachez	"	90	83	81	71	84	84	84	67	1892	1493	1312	1238
"	131794	D45/5A	"	"	—	69	78	63	—	69	80	72	—	1411	1302	1234
"	132171	J14/34	Seedling	U.S.S.R. (2)	96	76	77	62	84	74	76	64	1908	1471	1298	1194
"	132739	D44/42,43	Erica Rudolph	Germany	84	76	80	72	85	69	80	71	1863	1471	1303	1251
"	132752	D44/44,45	Rote Meotarine (neot.)	"	84	77	78	71	84	67	78	68	1863	1471	1302	1238
"	133502	E12/9,10	Italian Cling	Australia	90	74	80	68	87	68	79	61	1892	1463	1303	1234
"	133865	H20/12	Tanaka Wase Jap	New Zealand	—	79	81	65	90	65	77	55	—	1475	1312	1222
"	135966	J19/91	Seedling	India (2)	—	76	78	65	83	61	76	61	—	1471	1302	1222
"	136414	D9/21	Barrington	England	93	78	75	68	93	74	80	71	1905	1471	1281	1234
"	"	D45/22A	"	"	—	71	78	68	—	67	77	68	—	1439	1302	1234
"	137908	J15/108	Seedling	Iran (2)	92	76	81	62	83	65	74	51	1898	1471	1312	1194
"	137912	J16/7	"	"	89	73	86	65	80	63	74	60	1885	1458	1341	1222
"	"	J16/11	"	"	92	76	78	66	84	64	75	61	1898	1471	1302	1229
"	137914	J16/40	"	"	89	73	82	65	83	66	75	62	1885	1471	1320	1222
"	138969	D10/6	"	(3) Turkistan(2)	97	74	77	63	91	75	74	64	1908	1463	1298	1222
"	"	G4/1,2	"	(D10/6)(3)	87	74	62	70	90	72	77	63	1874	1463	1320	1234
"	141087	J16/42	"	Iran (2)	89	76	84	54	84	67	78	64	1885	1471	1326	1214
"	"	J16/45	"	"	95	72	78	65	85	65	78	65	1908	1450	1302	1222
"	141090	J17/58	"	"	88	75	86	63	80	64	73	60	1882	1471	1341	1205
"	141091	J16/64	"	"	94	75	78	65	85	65	78	64	1908	1471	1302	1222
"	141092	J16/72	"	"	93	77	78	65	85	67	74	62	1905	1471	1302	1222
"	"	J16/75	"	"	94	74	79	65	83	62	75	60	1908	1463	1303	1222
"	"	J16/76	"	"	94	77	78	64	83	66	76	65	1908	1471	1302	1214
"	"	J16/77	"	"	93	77	78	64	84	65	77	63	1905	1471	1302	1214
"	"	J16/79	"	"	92	78	78	65	84	66	76	66	1898	1471	1302	1222
"	141094	J16/85	"	"	93	76	78	63	83	64	76	59	1905	1471	1302	1205
"	141097	J16/102	"	"	88	74	85	64	83	62	76	59	1882	1463	1334	1214
"	141098	J16/104	"	"	93	75	79	65	83	65	77	60	1905	1471	1303	1222
"	141101	JJ/5	"	"	—	74	80	66	87	62	78	61	—	1463	1303	1229
"	"	J16/126	"	"	94	76	78	64	84	66	75	61	1908	1471	1302	1214
"	"	J16/128	"	"	94	76	79	64	87	64	75	62	1908	1471	1303	1214
"	141103	J16/139	Seedling	"	94	76	78	6	83	64	74	59	1908	1471	1302	1214
"	"	J16/140	"	"	94	76	78	65	83	64	74	59	1908	1471	1302	1222
"	"	J16/141	"	"	93	77	78	6	83	64	74	62	1905	1471	1302	1214
"	141107	J17/154	"	"	89	76	—	67	84	63	76	63	1885	1471	—	1233
"	141109	J17/20	"	"	89	75	84	65	84	60	76	61	1885	1471	1328	1222
"	141115	JH/30	" (neot.)	"	94	74	78	66	84	65	69	63	1908	1463	1302	1229
"	"	JH/33	"	"	94	74	79	66	84	63	77	62	1908	1463	1303	1229
"	"	JH/36	"	"	94	73	78	66	84	65	76	63	1908	1458	1302	1229
"	141117	JK/55	"	"	94	76	78	63	87	65	76	64	1908	1471	1302	1205
"	141119	JE/61	"	"	96	76	79	62	87	78	78	63	1908	1471	1303	1194
"	143345	J1/88	"	"	93	74	—	64	87	63	76	63	1908	1463	—	1214
"	"	J1/94	"	"	94	74	80	64	87	65	69	61	1908	1463	1302	1214
"	143743	D41/31,32	Sunglow	U.S.A.	91	76	79	65	91	85	80	67	1898	1471	1303	1222
"	145996	P22/2	Seedling	Iran (2)	89	74	80	68	81	65	79	64	1885	1463	1303	1234
"	"	P22/5	"	"	89	74	79	68	79	65	79	64	1885	1463	1303	1234
"	146002	P23/9	"	"	90	74	79	70	79	72	71	61	1892	1463	1303	1234
"	"	P23/10	"	"	91	74	77	69	79	67	71	51	1898	1463	1298	1234
"	146004	P23/59	"	"	88	74	83	67	88	78	80	63	1882	1463	1326	1233

AVE. BLOOM INDEX	P. I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE			
					FULL BLOOM				FIRST LEAF				AT OR BELOW 45°F. FROM			
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53	NOV. 1 1949	1950	1951	1953
78	146009	P24/31	Seedling	Iran (2)	88	74	80	70	82	65	79	61	1882	1463	1303	1234
"	146014	P23/31	"	"	91	78	81	61	84	76	77	62	1898	1471	1312	1184
"	"	P23/37	"	"	92	76	83	62	82	79	76	62	1898	1471	1326	1194
"	146024	P24/7	" (nect.)	"	90	76	81	63	86	73	79	63	1892	1471	1312	1205
"	146027	P20/49	"	"	90	75	80	65	84	69	80	—	1892	1471	1303	1222
"	"	P20/50	"	"	90	75	81	65	84	69	83	—	1892	1471	1312	1222
"	"	P20/51	"	"	90	75	81	64	82	69	83	66	1892	1471	1312	1214
"	"	P20/52	"	"	—	75	81	65	81	67	84	63	—	1471	1312	1222
"	"	P20/53	"	"	91	74	80	65	82	71	84	64	1898	1463	1303	1222
"	"	P20/55	"	"	90	74	81	61	82	71	84	66	1892	1463	1312	1222
"	"	P20/56	"	"	90	76	82	63	82	71	82	64	1892	1471	1320	1205
"	"	P20/59	"	"	90	78	82	63	88	82	80	63	1892	1471	1320	1205
"	146031	P24/15	"	"	90	75	80	68	84	75	80	60	1892	1471	1303	1234
"	146032	P22/44	"	"	86	74	83	69	82	64	79	62	1869	1463	1326	1234
"	"	P22/50	"	"	94	76	79	—	82	65	79	—	1908	1471	1303	—
"	"	P22/53	"	"	87	74	82	69	79	65	80	62	1874	1463	1320	1234
"	146034	P21/60	"	"	87	80	82	62	84	76	81	62	1874	1476	1320	1194
"	146138	F2/21	Chico #19 (3)	U.S.S.R. (2)	87	73	80	73	87	71	76	60	1874	1458	1303	1259
"	146246	G3/23,24	North Caucasus #19(3)	"	91	78	8	65	83	83	78	61	1898	1471	1302	1222
"	146249	F4/13	" " " 22 "	"	87	73	80	68	87	66	79	60	1874	1458	1303	1234
"	"	G3/29,30	" " " " "	"	91	76	80	69	84	80	78	59	1898	1471	1303	1234
"	146701	E11/34	Hardee	U.S.A.	90	72	80	—	81	65	79	60	1892	1450	1303	—
"	"	D46/21	"	"	—	—	78	68	—	63	68	58	—	—	1302	1234
"	148202	E9/38,39	Williams	"	90	77	80	64	81	79	83	60	1892	1471	1303	1214
"	148266	E10/37,38	Hope Farm	"	90	74	79	67	81	68	79	60	1892	1463	1303	1233
"	153813	D46/43,44	N.J.#137	"	—	73	81	68	81	64	74	58	—	1458	1312	1234
"	161321	JH/28	Seedling (nect.) (3)	Iran (2)	94	74	79	65	84	65	71	63	1908	1463	1303	1222
79	C-26638	N6/3,4	Triumph	U.S.A.	87	83	80	65	82	71	83	59	1874	1493	1303	1222
"	C-27146	D39/43,44	Early Rochester	"	88	77	80	69	91	75	78	62	1882	1471	1303	1234
"	43127	E3/41,42,43	Ideal	New Zealand	90	76	82	66	86	72	76	65	1892	1471	1320	1229
"	43140	E23/12,13	Diamond Jubilee (nect.)	"	91	79	80	65	87	78	79	56	1898	1475	1303	1222
"	43142	E23/14,15	Lippiatt's Late Orange (nect.)	"	91	79	80	67	89	79	80	—	1898	1475	1303	1233
"	57918	E2/5,6	White Cling	"	89	79	81	67	86	71	79	63	1885	1475	1312	1233
"	68352	E4/23,24	Pullar's Cling	Australia	86	83	82	64	86	75	80	59	1869	1493	1320	1214
"	77876	E4/29,30	Tos-China #1	Italy	87	79	85	63	89	83	76	53	1874	1475	1334	1205
"	86299	D10/12	Seedling	Iran (2)	98	76	79	65	92	82	79	66	1912	1471	1303	1222
"	"	G3/5,6	(D10/12)	"	87	74	80	70	81	74	79	65	1874	1463	1303	1234
"	88562	E24/3,4	Dryden (nect.)	New Zealand	91	79	79	65	87	79	78	66	1898	1475	1303	1222
"	93826	E10/5,6	Inkoos	S.Africa	90	77	80	70	90	78	79	68	1892	1471	1303	1234
"	102705	E2/17,18	Seedling (nect.)	U.S.S.R. (2)	89	79	82	65	89	77	78	56	1885	1475	1320	1222
"	104315	F4/24	North Caucasus	"	91	80	79	68	84	84	78	61	1898	1476	1303	1234
"	"	G3/19,20	" (F4/24)	"	87	79	80	66	87	84	79	60	1874	1475	1303	1229
"	105055	F1/123	Seedling	"	91	74	80	71	89	79	79	62	1898	1463	1303	1238
"	105056	F2/92	" (nect.)	"	91	73	80	72	89	84	79	70	1898	1458	1303	1251
"	105062	G3/37,38	" (F3/31)	"	87	79	83	66	87	84	78	62	1874	1475	1326	1229
"	"	F3/33	"	"	87	73	79	63	87	71	78	62	1874	1458	1303	1205
"	105065	F3/101	"	"	87	76	80	74	81	82	79	59	1874	1471	1303	1256
"	"	G4/36,37	" (F3/101)	"	87	74	80	71	82	76	79	62	1874	1463	1303	1238
"	105116	E10/39,40	Cotogna Massima	Italy	92	75	83	63	90	74	79	57	1898	1471	1326	1205
"	105118	E9/14,15	Poppa di Venere D'Ognissanti	Italy	87	79	83	66	84	70	82	68	1874	1475	1326	1229
"	106232	E24/13,14	Wright's Orange (nect.)	New Zealand	90	80	80	64	90	79	77	57	1892	1476	1303	1214

AVE. BLOOM INDEX	P. I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE			
					FULL BLOOM				FIRST LEAF				AT OR BELOW 45°F. FROM			
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53	NOV. 1 1949	UNTIL 1950	FULL 1951	BLOOM 1953
79	107838	J1/110	Sdlg. of Mao Tao	China (2)	—	78	81	61	92	68	78	60	—	1471	1312	1184
"	117488	E18/19,20	Fisher (patent)	Canada	90	79	84	63	90	79	84	71	1892	1475	1328	1205
"	122165	J4/56	Seedling	India (2)	84	79	81	61	89	65	74	63	1908	1475	1312	1194
"	124924	J5/29	"	Mexico (2)	95	79	82	60	84	65	72	60	1908	1475	1320	1170
"	125104	E14/32,33	Ambergem	U.S.A.	88	76	84	69	88	71	76	57	1882	1471	1328	1234
"	125282	E13/20	Sunbeam	"	90	76	80	70	87	76	79	64	1892	1471	1303	1234
"	125397	E23/3,4	Grady (neot.)	"	88	77	79	70	84	70	78	7	1882	1471	1303	1234
"	125573	G5/7	Seedling of Shaftaln	India (81)	86	74	81	75	84	76	80	64	1869	1463	1312	1270
"	125575	J4/105	Sdlg. of Shaftaln	"	94	77	82	62	88	69	74	60	1908	1471	1320	1194
"	127350	E14/43	Gaillard-Gerard II	France	90	76	83	68	90	84	79	70	1892	1471	1326	1234
"	129613	E23/30,31	Lippiatt's Prolifio (neot.)	Australia	91	79	79	66	84	79	81	59	1898	1475	1303	1229
"	129678	E25/17,18	Stanwick (neot.)	S. Africa	90	72	80	65	87	79	80	57	1892	1450	1303	1222
"	129803	E18/33,34	Beale	Australia	90	70	84	71	89	77	84	59	1892	1425	1328	1238
"	129818	E25/21,22	Hunt's Tawny (neot.)	"	90	79	80	67	87	79	79	56	1892	1475	1303	1233
"	130897	E19/7,8	Golden Eagle	England	91	79	80	67	85	79	85	66	1899	1475	1303	1233
"	130900	E70/17,18	Prince of Wales	"	91	75	80	67	81	68	84	66	1898	1471	1303	1233
"	130904	D40/33,34	Newton (neot.)	"	91	76	80	67	93	73	79	66	1898	1471	1302	1233
"	130936	E19/12	Golden Globe	U.S.A.	91	79	80	64	90	72	83	58	1898	1475	1303	1214
"	130966	E11/14,15	Belle de Sanzy	France	90	83	80	64	29	53	79	58	1892	1493	1303	1214
"	131799	E19/31,32	Tard. ve d'Orleans	"	91	79	79	68	90	79	77	57	1898	1475	1303	1234
"	131845	D40/27,28	Brunnen Galopin (neot.)	"	92	77	80	67	93	80	80	67	1898	1471	1303	1234
"	132171	J14/33	Seedling	U.S.S.R. (2)	95	76	82	61	89	76	83	65	1908	1471	1320	1184
"	132175	J14/39	"	"	89	83	77	63	80	62	74	63	1885	1504	1298	1205
"	133509	E12/19,20	Pioneer	Australia	90	75	79	71	90	68	79	60	1892	1471	1303	1238
"	133548	E12/23,26	Hawkesbury Champion	"	87	77	79	71	88	84	79	65	1874	1471	1303	1238
"	133846	E13/14,15	Free King	New Zealand	90	77	79	—	90	80	84	56	1892	1471	1303	—
"	133868	E20/13,14	Taylor's Red	"	92	79	79	66	84	65	77	54	1898	1475	1303	1229
"	133918	E25/41,42	Marina (neot.)	Australia	91	79	79	66	93	79	83	61	1898	1475	1303	1229
"	136144	E7/34,35	Angevine	France	87	83	84	67	81	76	77	62	1874	1493	1328	1233
"	"	E7/33,34	"	"	90	74	81	67	88	68	79	56	1892	1463	1312	1233
"	137909	J15/120	Seedling	Iran (2)	96	77	80	62	86	61	74	52	1908	1471	1303	1194
"	"	J15/125	"	"	94	76	82	64	86	68	75	53	1908	1471	1320	1214
"	"	J15/126	"	"	94	75	83	62	86	65	75	54	1908	1471	1326	1194
"	137911	J15/141	"	"	91	76	85	63	86	66	75	58	1898	1471	1341	1205
"	137912	J16/1	"	"	89	74	85	67	83	63	74	63	1885	1463	1334	1233
"	"	J16/16	"	"	89	73	87	66	83	62	74	59	1885	1458	1347	1229
"	141088	J16/46	"	"	92	77	82	64	85	76	78	56	1898	1471	1320	1214
"	141091	J16/68	"	"	94	73	78	56	83	66	76	62	1908	1471	1302	1229
"	"	J17/97	" (neot.)	"	89	77	85	63	84	63	78	64	1885	1471	1334	1205
"	141094	J15/38	"	"	90	75	85	55	83	65	76	60	1892	1471	1334	1222
"	141098	J16/113	"	"	91	76	84	66	83	66	78	62	1893	1471	1328	1229
"	141100	J1-36	"	"	94	79	80	63	87	74	76	60	1908	1475	1303	1205
"	141101	J1-14	"	"	—	76	80	63	87	65	78	61	—	1471	1303	1205
"	141104	J16/154	"	"	92	77	83	64	83	66	78	60	1893	1471	1326	1214
"	"	J17/2	"	"	89	74	84	67	84	64	78	58	1885	1463	1328	1233
"	141105	J17/11	"	"	89	74	87	65	86	52	78	60	1885	1463	1347	1222
"	141106	J17/12	"	"	89	74	89	65	84	63	83	61	1885	1463	1361	1222
"	141111	J18/64	"	"	92	78	—	65	83	87	78	64	1898	1471	—	1222
"	"	J18/69	"	"	91	79	79	65	83	76	77	52	1898	1475	1303	1222
"	141115	JH/25	" (neot.)	"	94	74	77	72	84	64	75	63	1908	1463	1298	1251

AVE. BLOOM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45°F. FROM			
					FULL BLOOM				FIRST LEAF				NOV. 1 UNTIL FULL BLOOM			
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53	1949	1950	1951	1953
79	141117	JK/44	Seedling (neot.)	Iran (2)	96	76	80	63	89	60	77	62	1908	1471	1303	1205
"	"	JK/47	"	"	96	78	79	64	89	63	78	64	1908	1471	1303	1214
"	"	JK/49	" (neot.)	"	94	79	79	62	87	62	76	59	1908	1475	1303	1194
"	141119	JH/72	"	"	96	78	79	62	90	71	79	62	1908	1471	1303	1194
"	141204	D38/36,37	A. persica, foliis purpureis	England	91	78	79	67	89	79	76	—	1898	1471	1303	1233
"	142236	E9/12,13	Vanguard	Canada	90	76	83	66	83	76	81	69	1892	1471	1326	1229
"	143345	J1/95	Seedling	Iran (2)	93	78	—	66	89	65	75	62	1905	1471	—	1229
"	146004	P23/52	"	"	88	89	80	60	86	81	82	65	1882	1526	1309	1170
"	"	P23/63	"	"	91	78	82	65	84	86	80	62	1898	1471	1320	1222
"	146005	P23/15	"	"	90	76	78	70	81	69	79	62	1892	1471	1302	1234
"	146013	P22/11	"	"	89	74	80	72	81	66	78	61	1885	1463	1303	1251
"	"	P22/14	"	"	89	74	82	72	79	65	76	61	1885	1463	1320	1251
"	"	P22/15	"	"	89	73	82	72	79	66	77	63	1885	1458	1320	1251
"	146014	P23/32	"	"	90	78	81	65	84	76	77	62	1892	1471	1312	1222
"	146020	P23/5	" (neot.)	"	87	76	82	71	82	79	81	65	1874	1471	1320	1238
"	146022	P23/51	"	"	88	83	83	62	87	71	82	63	1882	1493	1326	1194
"	146027	P20/58	" (neot.)	"	90	78	82	64	84	82	80	62	1892	1471	1320	1214
"	"	P20/60	"	"	89	79	82	66	84	82	89	65	1885	1475	1320	1229
80	C-25061	E23/5,5	Cardinal (neot.)	U.S.A.	90	80	80	71	88	86	80	80	1892	1476	1303	1238
"	C-25876	N1/10,11	Salwey	"	88	88	81	64	79	74	78	59	1892	1524	1312	1214
"	C-26906	E8/23	Maxine	"	90	86	84	67	90	76	79	64	1892	1506	1328	1233
"	"	E13/31	"	"	90	76	83	66	90	60	84	64	1892	1471	1326	1229
"	65974	E24/25,26	De Coosa (neot.)	Italy	88	84	80	66	88	79	79	62	1892	1502	1303	1229
"	101824	E6/7,8	Brugnon Adele	Morocco	90	84	79	67	90	86	83	68	1892	1502	1303	1233
"	102403	E6/39,40	Grosse Montagna	Italy	89	84	81	66	90	75	78	64	1885	1502	1312	1229
"	102521	E7/15,16	Giallona Di Papigno	"	90	83	82	66	90	72	79	55	1892	1493	1320	1229
"	102524	E7/19,20	Gianzo	"	90	84	82	65	90	78	83	66	1892	1502	1320	1222
"	102706	E2/19,20	Ferganensis	U.S.S.R. (2)	89	84	82	64	89	75	78	56	1885	1502	1320	1214
"	104494	E10/27	Santa Anna Giallo	Italy	—	83	84	68	90	76	79	71	—	1493	1328	1234
"	"	D41/29	"	"	89	71	80	69	93	68	77	58	1885	1439	1303	1234
"	105062	F3/29	Seedling	U.S.S.R. (2)	93	79	79	73	87	71	70	63	1905	1458	1303	1259
"	"	G3/35,36	" (F3/29)	"	87	78	82	73	87	83	78	66	1874	1471	1320	1259
"	105064	F3/24	"	"	89	76	80	73	84	84	77	68	1885	1471	1303	1259
"	105310	E10/31,32	Arthur Chevreau	Italy	—	77	85	69	90	86	83	69	—	1471	1334	1234
"	105362	E11/10,11	Genovese	"	90	77	84	69	91	80	84	64	1892	1471	1328	1234
"	105338	J1/97	Sdlg. of Mao Tao	China (2)	—	79	81	62	88	62	71	61	—	1475	1312	1194
"	"	J1/106	"	"	98	78	80	62	90	68	78	63	1912	1471	1303	1205
"	"	J1/112	"	"	98	79	81	63	88	68	79	64	1912	1475	1312	1205
"	"	J1/118	"	"	—	77	81	64	83	62	72	60	—	1471	1312	1214
"	119917	E2/33,34	Downing	Australia	89	84	80	68	89	84	84	—	1885	1502	1303	1234
"	119844	E25/3,4	Seedling, flat type (neot)	Turkistan	90	79	80	69	89	79	82	—	1892	1475	1303	1234
"	123969	E14/21,22	Lialak 769F (neot.)	U.S.S.R.	90	76	80	74	91	72	79	57	1892	1471	1303	1266
"	125572	J4/65	Seedling	Afghanistan (2)	95	77	82	64	88	75	79	63	1908	1471	1320	1214
"	"	J4/70	"	"	95	79	80	65	88	65	78	61	1908	1475	1303	1222
"	125575	J4/98	Sdlg. of Shaftain	"	95	79	83	61	88	65	78	60	1908	1475	1326	1184
"	125576	J4/109	"	"	94	81	84	61	83	69	74	60	1908	1476	1328	1205
"	125577	J4/113	"	"	95	79	84	63	83	64	72	60	1908	1475	1328	1205
"	125989	E14/38,39	Fernechter von Vorgebirge	Germany	88	86	82	63	89	86	85	56	1882	1506	1320	1205
"	127322	J4/116	Seedling	India (2)	97	77	83	62	88	85	79	60	1908	1471	1326	1194
"	127429	J5/2	"	Afghanistan (2)	93	79	83	62	84	62	77	63	1905	1475	1326	1194
"	127431	J4/153	"	"	93	81	83	63	88	85	82	63	1905	1476	1326	1205

AVE. BLOOM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45 F. FROM			
					FULL BLOOM				FIRST LEAF				NOV. 1 1949	UNTIL 1950	FULL BLOOM 1951	FROM 1953
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53				
80	127432	J5/14	Seedling	Afghanistan(2)	—	83	83	64	88	66	81	66	—	1493	1326	1214
"	129612	E25/15,16	Goldmine Late (neot.)	Australia	91	80	81	67	86	68	79	59	1898	1476	1312	1233
"	129807	E18/39,40	Healesville Cing	"	92	80	84	65	88	79	77	56	1898	1476	1328	1222
"	130724	J13/122	Seedling	Mexico (2)	96	76	85	62	80	52	67	50	1908	1471	1334	1194
"	131074	E25/29,30	Prince of Wales (neot.)	England	91	81	81	68	87	86	85	—	1898	1476	1312	1234
"	131551	E25/33,34	Fernand Demeyer ( " )	Belgium	91	80	80	68	89	84	79	—	1898	1476	1303	1234
"	131792	E12/3,4	Inspecteur Battanchon	France	90	79	84	67	90	67	84	69	1892	1475	1328	1233
"	132551	E9/25	Samling #30	Germany	90	83	81	67	84	72	79	59	1892	1493	1312	1233
"	132740	D39/3,4	Frau Marie Rudolph	"	92	79	78	69	92	86	81	71	1898	1475	1302	1234
"	132741	E7/41,42	Girard #1	"	90	83	84	64	87	72	86	68	1892	1493	1328	1214
"	133499	D40/8	Braddock Imperial	Australia	95	78	80	69	91	79	80	66	1908	1471	1303	1234
"	"	D45/11A	"	"	—	76	80	68	—	76	81	70	—	1471	1303	1234
"	133546	E6/34	Chapman	Australia	90	83	81	65	81	83	84	65	1892	1493	1312	1222
"	133549	E12/27,28	Irelands Seedling	"	90	79	80	70	88	80	84	71	1892	1475	1303	1234
"	133555	D40/40,41	Webb's Seedling	"	91	78	83	67	91	83	80	69	1898	1471	1326	1233
"	133557	E25/37,38	Fripp's Late (neot.)	"	91	79	80	71	91	81	80	—	1898	1475	1303	1238
"	133558	E25/39,40	Victoria Rivers "	"	91	79	80	68	90	79	83	—	1898	1475	1303	1234
"	134588	E7/36,37	Baritan Rose	U.S.A.	90	83	80	67	81	74	77	56	1892	1493	1303	1233
"	"	E20/23,24	"	"	91	77	81	68	87	68	77	56	1898	1471	1312	1234
"	135696	J17/33	Seedling (neot.)	Afghanistan(2)	89	76	85	69	84	65	78	65	1885	1471	1334	1234
"	"	J17/42	"	"	89	76	86	68	84	61	78	61	1885	1471	1341	1234
"	"	J17/47	"	"	89	78	86	66	84	62	78	65	1885	1471	1341	1229
"	"	J17/54	"	"	89	75	89	65	84	63	78	64	1885	1471	1361	1222
"	136145	E7/7	Belle Eloise	France	90	84	81	66	81	72	70	58	1892	1502	1312	1229
"	136241	E7/1,2	Belle de Lourdesiennes	"	90	85	81	64	90	86	86	62	1892	1504	1312	1214
"	137910	J15/133	Seedling	Iran (2)	91	77	86	65	86	65	74	57	1898	1471	1341	1222
"	137911	J15/145	"	"	94	76	84	66	86	66	76	56	1908	1471	1328	1229
"	137914	J16/38	"	"	92	79	82	65	84	65	75	64	1898	1475	1320	1222
"	141087	J16/44	"	"	94	76	86	65	85	76	76	66	1908	1471	1341	1222
"	141090	J17/67	"	"	92	77	84	64	83	63	78	61	1898	1471	1349	1214
"	"	J17/72	"	"	92	78	85	64	83	63	78	60	1898	1471	1334	1214
"	"	J17/73	"	"	89	77	81	64	87	66	85	63	1885	1471	1378	1214
"	141091	J17/80	" (neot.)	"	91	78	86	64	85	61	76	63	1898	1471	1341	1214
"	141098	J16/110	"	"	92	76	85	65	83	66	78	63	1898	1471	1334	1222
"	141100	J1/39	"	"	94	78	—	63	87	79	79	58	1908	1471	—	1205
"	"	J16/123	"	"	83	78	84	65	89	66	77	62	1905	1471	1328	1222
"	141108	J17/16	"	"	89	74	89	66	84	62	78	63	1885	1463	1361	1229
"	141110	J17/24	"	"	89	78	85	70	86	63	79	66	1885	1471	1334	1234
"	141115	JH/5	" (neot.)	"	94	74	—	72	95	63	73	61	1908	1463	—	1251
"	"	JH/6	"	"	94	74	—	73	97	63	79	64	1908	1463	—	1259
"	143911	E7/5,6	World's Earliest (patent)	U.S.A.	90	83	87	66	8	72	84	57	1892	1493	1312	1229
"	145998	P22/19	Seedling	Iran (2)	90	76	—	70	79	35	30	6	1892	1471	1326	1234
"	"	P22/20	"	"	87	78	80	71	81	69	79	63	1874	1471	1326	1238
"	"	P22/22	"	"	87	78	84	72	81	72	80	65	1874	1471	1328	1251
"	"	P22/24	" 9	"	87	78	82	72	81	71	79	64	1874	1471	1320	1251
"	146004	P23/58	" (neot.)	"	81	82	81	66	84	78	79	62	1898	1489	1320	1229
"	146011	P22/29	"	"	82	82	85	64	87	83	85	—	1898	1489	1326	1214
"	146013	P22/10	"	"	89	81	80	71	81	71	77	63	1885	1476	1303	1238
"	146020	P23/6	" (neot.)	"	87	76	85	72	82	83	80	66	1874	1471	1326	1251
"	146025	P22/32	"	"	91	78	83	71	82	79	81	62	1898	1471	1326	1238
"	146251	F3/120	North Caucasus #24(3)	U.S.S.R.(2)	91	79	80	72	87	82	79	73	1898	1475	1303	1251
"	"	G3/27,28	" (F3/120)"	"	93	78	81	67	90	79	79	61	1905	1475	1312	1233

AVE. BLOOM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE			
					FULL BLOOM				FIRST LEAF				AT OR BELOW 45°F. FROM			
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53	NOV. 1 1949	UNTIL 1950	FULL BLOOM 1951	FROM 1953
80	153812	D47/3	Jerseyland	U.S.A.	—	78	79	69	81	65	74	60	—	1471	1303	1234
	159983	JH/1	Seedling (nect.)(3)	Iran (2)	94	78	—	66	85	62	—	61	1908	1471	—	1229
81	38469	D16/6,7	Feicheng Seedling	China	98	79	81	67	94	86	79	64	1912	1475	1312	1233
"	48508	E8/39,40	Indian Blood	U.S.A.	90	86	80	68	92	84	84	67	1892	1506	1303	1234
"	66094	E7/17,18	Galande	France	90	84	82	67	89	86	87	65	1892	1502	1320	1233
"	101663	E5/4,5	Ta Tao or Fei #1	China	90	84	84	—	96	89	86	89	1892	1502	1328	—
"	105364	E9/20,21	Incomparable Guilloux	Italy	93	85	79	68	90	80	83	69	1905	1504	1303	1234
"	105856	E24/33,34	Lee's (nect.)	Australia	91	84	84	65	91	84	83	—	1898	1502	1328	1222
"	105858	E24/11,12	W. C. Frupp (nect.)	"	90	79	82	71	91	79	83	66	1892	1475	1320	1238
"	107838	J1/113	Sdlg. of Mao Tao	China (2)	98	79	82	63	88	62	79	62	1212	1475	1320	1205
"	109902	E2/29,30	Bellegarde	England	89	83	83	67	89	70	78	66	1885	1493	1326	1233
"	110201	E12/17,18	Paviagiarella	Italy	90	84	84	67	90	84	86	70	1892	1502	1328	1233
"	111412	E24/15,16	Irrewarra (nect.)	Australia	90	85	83	67	91	85	84	—	1892	1504	1326	1233
"	119846	E14/18	A.persica platycarpa #1383T	Turkestan	90	76	86	72	90	76	79	68	1892	1471	1341	1251
"	125577	J4/111	Sdlg. of Shaftaln	Afghanistan(2)	97	82	83	63	88	69	78	60	1908	1489	1326	1205
"	126551	E3/19,20	Buttercup	U.S.A.	89	84	83	67	88	79	83	63	1885	1502	1326	1233
"	126554	E3/29,30	Marigold	"	90	84	83	65	90	84	79	65	1892	1502	1326	1222
"	126555	E3/23,24	Massasoit	"	89	83	83	68	86	75	83	65	1885	1493	1326	1234
"	126558	E3/27,28	Rosebud	"	89	84	83	69	87	83	76	65	1885	1502	1326	1234
"	126560	E3/33,34	Vaughn	"	90	84	83	67	88	86	87	67	1892	1502	1326	1233
"	126565	E3/13,14	Vedette	"	88	80	83	70	86	83	81	57	1882	1493	1326	1234
"	126566	E3/11,12	Viceroy	"	89	83	82	69	88	80	78	60	1885	1493	1320	1234
"	127430	J5/9	Seedling	Afghanistan(2)	95	82	85	61	89	72	79	61	1908	1489	1334	1184
"	127431	J5/1	"	"	93	85	86	61	88	65	83	65	1905	1504	1341	1184
"	129816	E19/5,6	Yarra Yarra Cling	Australia	90	79	83	70	90	79	82	66	1892	1475	1326	1234
"	130896	E11/30,31	Duke of York	England	91	76	83	72	87	76	81	71	1898	1471	1326	1251
"	131069	E19/19,20	James Walker	"	91	79	83	71	89	77	85	68	1898	1475	1326	1238
"	131073	E25/27,28	Hardwicke (nect.)	"	91	79	83	69	91	82	85	—	1898	1475	1326	1234
"	131075	E25/31,32	Violette Hativa (nect.)	"	91	81	82	71	86	84	85	58	1898	1476	1320	1238
"	131781	E19/27,28	Bardou-Job	France	91	79	85	69	91	68	84	56	1898	1475	1334	1234
"	131785	E12/1,2	Clemence Isaure	"	90	77	84	71	85	80	84	65	1892	1471	1328	1238
"	132172	J14/35	Seedling	U.S.S.R.(2)	96	87	77	64	87	76	74	63	1908	1517	1298	1214
"	132176	J14/41	"	"	89	85	84	64	80	66	76	62	1885	1504	1328	1214
"	134400	D16/17	"	China (2)	96	82	79	71	91	86	80	68	1908	1489	1303	1238
"	"	E20/3,4	" (D16/17)	"	91	84	80	71	90	79	85	64	1898	1502	1303	1238
"	134667	E20/19,20	Henri Adenot	Switzerland	91	81	83	67	89	79	86	—	1898	1476	1326	1233
"	135696	J17/40	Seedling (nect.)	Afghanistan(2)	89	79	88	67	84	65	78	64	1885	1475	1349	1233
"	136148	E8/2	Girerd #4	France	90	83	84	66	92	72	85	70	1892	1493	1328	1229
"	141087	J1/58	Seedling	Iran (2)	94	79	—	63	87	65	78	62	1908	1475	—	1205
"	141090	J16/53	"	"	95	79	82	66	85	67	77	64	1908	1475	1320	1229
"	141091	J16/60	" (nect.)	"	92	80	85	65	85	76	78	67	1898	1476	1334	1222
"	141097	JK/31	"	"	92	79	—	66	87	74	76	63	1898	1475	—	1229
"	141116	JJ/30	" (nect.)	"	—	80	79	71	91	73	79	65	—	1476	1303	1238
"	141119	JH/46	"	"	94	79	80	72	87	65	79	63	1908	1475	1303	1251
"	143904	E8/15,16	Colora	U.S.A.	90	86	81	68	86	76	85	67	1892	1506	1312	1234
"	143912	E7/21,22	Flaming Gold (nect.)	"	90	83	84	66	83	72	79	62	1892	1493	1328	1229
"	145998	P22/23	Seedling	Iran (2)	90	78	83	71	81	72	79	65	1892	1471	1326	1238
"	146020	P23/8	" (nect.)	"	90	78	83	73	82	83	79	64	1892	1471	1326	1259
"	146022	P23/45	"	"	92	84	85	64	84	81	82	61	1898	1502	1334	1214
"	"	P23/49	"	"	91	86	85	60	84	71	79	63	1898	1506	1334	1205
"	"	P23/50	"	"	91	84	85	64	84	71	82	64	1898	1502	1334	1214

AVE. BLOOM INDEX	P. I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45°F. FROM			
					FULL BLOOM				FIRST LEAF				NOV. 1 1949	UNTIL 1950	FULL 1951	BLOOM 1953
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53				
81	146032	P22/49	Seedling (nect.)	Iran (2)	90	83	81	70	84	72	83	62	1892	1493	1312	1234
"	"	P22/54	"	"	89	83	83	69	84	66	81	64	1885	1493	1326	1234
82	C-26641	N7/5,6	Hales Early	U.S.A.	89	85	81	73	86	73	84	72	1885	1504	1312	1259
"	C-26702	N10/1,2	Candoka	"	89	87	82	68	84	69	76	59	1885	1517	1320	1234
"	68353	E4/25,26	Golden Queen	Australia	92	84	85	67	90	84	81	64	1898	1502	1334	1234
"	78513	E4/35,36	Yennoh	U.S.S.R.	90	84	84	69	90	86	84	—	1892	1502	1326	1234
"	101559	D25/28	Seedling	France (2)	96	76	80	75	91	73	80	67	1908	1471	1303	1270
"	101835	E6/27,28	Precoce D'Ampius	Morocco	92	84	83	68	91	84	84	—	1898	1502	1326	1234
"	104025	E24/29,30	Noce Pesca Gialla(nect.)	Italy	91	86	84	68	91	79	80	58	1898	1506	1328	1234
"	105121	E11/2,3	Sanguigna	"	90	86	86	67	90	90	84	64	1892	1506	1341	1233
"	105122	E14/34,35	Senator Carlo Ridolfi	"	89	86	85	69	90	84	85	73	1885	1506	1334	1234
"	107838	J1/95	Sdlg. of Mao Tao	China (2)	—	75	82	71	95	68	78	61	—	1471	1320	1238
"	125573	J4/82	Sdlg. of Shaftaln	Afghanistan(2)	96	81	84	68	88	55	77	64	1908	1476	1328	1234
"	126990	E14/40	Schorlemer	Germany	90	86	85	67	90	86	85	70	1892	1506	1334	1233
"	127432	J5/12	Seedling	Afghanistan(2)	—	88	85	61	88	69	78	62	—	1524	1334	1184
"	130903	E25/23,24	Humboldt (nect.)	England	93	80	84	71	91	79	84	—	1905	1476	1328	1238
"	130905	E25/35	Spenser	"	91	79	86	70	91	86	86	—	1898	1475	1341	1234
"	130968	E11/32,33	Guilloux #41	France	91	86	83	69	88	83	84	68	1898	1506	1326	1234
"	131208	E11/36,37	Princess of Wales	England	90	84	82	70	90	82	84	68	1892	1502	1320	1234
"	131779	E19/25,26	Angevine Hatve	France	91	79	86	72	90	70	75	66	1898	1475	1341	1251
"	131801	E6/41,42	Jaune Magnifique(nect.)	"	90	84	83	71	80	68	76	65	1892	1502	1326	1238
"	131814	E6/38	Elegante (Guilloux 92)	"	89	84	84	68	81	86	84	69	1885	1502	1328	1234
"	"	E7/38	"	"	90	84	84	72	81	84	87	—	1892	1502	1328	1251
"	132466	E7/39,40	Neige	"	89	86	84	67	84	83	87	66	1885	1506	1328	1233
"	132742	E19/35,36	GX	Germany	91	80	84	73	91	79	84	76	1898	1476	1328	1259
"	133506	E12/35,36	Mannall's Slip	Australia	90	86	82	70	90	84	86	72	1892	1506	1320	1234
"	133553	E12/35,36	Pump's Seedling	"	90	86	83	70	88	83	84	60	1892	1506	1326	1234
"	133745	E9/3,4	Smith's	"	92	80	85	69	90	76	85	67	1898	1476	1334	1234
"	133747	E13/4,5	Zerbes	"	90	83	85	70	93	77	84	70	1892	1493	1334	1234
"	133859	E20/9,10	Goodhue	New Zealand	91	82	85	71	82	79	85	57	1898	1489	1334	1238
"	134401	D16/18	Seedling (3)	China (2)	—	87	79	70	91	84	80	62	—	1517	1303	1234
"	"	E20/5	" (D16/18) (3)	"	91	86	83	73	91	86	85	62	1898	1506	1326	1259
"	"	G6/10,20	"	"	87	79	82	73	90	84	81	64	1874	1475	1320	1259
"	136149	E8/19,20	Girerd #23	France	90	84	83	69	87	81	77	71	1892	1502	1326	1234
"	137911	J15/139	Seedling	Iran (2)	—	83	83	65	86	63	75	59	—	1493	1326	1222
"	137914	J16/33	"	"	94	82	86	67	84	67	78	60	1908	1489	1341	1233
"	141090	J16/59	"	"	92	82	85	68	85	76	78	65	1898	1489	1334	1234
"	141097	JK/35	"	"	97	79	—	64	87	72	78	63	1908	1475	—	1214
"	141098	JK/18	"	"	92	84	—	63	87	64	79	60	1898	1502	—	1205
"	141202	D40/29,30	A.persica,alba flore pleno	England	93	78	85	73	94	77	80	69	1905	1471	1334	1259
"	146022	P23/46	Seedling (nect.)	Iran (2)	92	84	85	65	82	79	81	62	1898	1502	1334	1222
"	"	P23/47	"	"	92	87	86	64	84	81	80	63	1898	1517	1341	1234
"	"	P23/48	"	"	92	86	86	65	84	72	84	61	1898	1506	1341	1222
"	146032	P22/51	"	"	91	83	84	71	84	65	82	64	1898	1493	1323	1238
"	"	P22/55	"	"	91	83	84	71	82	73	82	63	1898	1493	1323	1238
"	161320	JH/24	" (3)	"	94	78	—	74	84	73	78	62	1900	1471	—	1266
93	86296	E98/12	"	"	92	79	85	74	80	69	81	—	1890	1475	1334	1266
"	104484	E10/13,	Carota	Italy	92	86	84	68	91	81	84	67	1898	1506	1328	1234
"	104485	E10/15,16	Celeste imper (flat peach)	"	93	86	84	70	90	76	84	66	1905	1506	1328	1234
"	105062	F3/39	Seedling	U.S.S.R.(2)	93	79	79	73	89	71	78	64	1905	1475	1303	1259
"	"	G3/39,40	" (F3/39)	"	92	89	84	76	93	83	79	63	1898	1526	1328	1279
"	106943	F3/115	Sdlg. of Mac Tac	China (2)	—	84	83	73	89	84	80	72	—	1502	1326	1259
"	125574	J4/93	Sdlg. of Shaftaln	Afghanistan(2)	96	87	87	63	93	87	84	62	1908	1517	1347	1205

AVE. BLOOM INDEX	P.I.	LOCATION	NAME	SOURCE	I N D E X E S								HOURS OF TEMPERATURE AT OR BELOW 45° F. FROM			
					FULL BLOOM				FIRST LEAF				NOV. 1 UNTIL FULL BLOOM			
					19 49	19 50	19 51	19 53	19 49	19 50	19 51	19 53	1949	1950	1951	1953
83	129610	E24/23,24	Fertile du Poitou (neot.)	Australia	88	86	82	74	89	79	80	73	1882	1506	1320	1266
"	131430	E5/1,2	Darwir (neot.)	England	90	84	84	72	89	84	84	67	1892	1502	1328	1251
"	131798	E12/5,6	Rouge D'Aout	France	90	86	84	72	90	78	76	60	1892	1506	1328	1251
"	133551	E12/31,32	Peregrine	Australia	90	86	84	72	91	94	88	75	1892	1506	1328	1251
"	133552	E12/33,34	Pickering	"	90	86	84	70	91	79	86	73	1892	1506	1328	1234
"	137910	J15/134	Seedling	Iran (2)	93	85	85	67	86	69	83	60	1905	1504	1334	1233
"	138966	E7/30	Seedling No. 4	Argentina (2)	95	82	84	73	89	82	84	67	1908	1489	1328	1239
"	"	D45/25A	"	"	—	86	82	69	—	86	81	67	—	1506	1320	1234
"	141090	J16/49	"	Iran (2)	95	84	85	67	85	76	76	64	1908	1502	1334	1233
"	141098	JK/1	"	"	91	79	—	72	85	64	76	61	1898	1475	—	1251
"	141109	JL/9	"	"	98	80	—	65	89	84	—	64	1912	1476	—	1222
"	146014	P23/38	" (neot.)	"	92	83	85	73	86	79	85	64	1898	1493	1334	1259
"	146022	P23/40	"	"	92	84	85	72	84	78	83	63	1898	1502	1334	1251
"	"	P23/42	"	"	92	86	83	70	84	80	81	61	1898	1506	1326	1234
"	"	P23/43	"	"	92	84	84	70	84	83	83	60	1898	1502	1328	1234
"	"	P23/44	"	"	92	82	87	69	84	79	80	62	1898	1489	1347	1234
"	146025	P22/31	"	"	91	82	85	73	87	81	83	62	1898	1489	1334	1259
84	101689	E5/40,41	Ta Tao or Fei #27	China	95	86	86	—	93	86	87	—	1908	1506	1341	—
"	107838	J1/94	Sdlg. of Mao Tao	" (2)	—	83	83	71	95	62	79	61	—	1493	1326	1238
"	"	J1/116	"	"	—	81	83	71	89	62	83	63	—	1476	1326	1238
"	133729	E6/3,4	Crimson	Australia	94	84	86	73	86	85	86	66	1908	1502	1341	1259
"	146022	P23/41	Seedling (neot.)	Iran (2)	92	86	84	72	86	81	82	62	1898	1506	1328	1251
85	62602	E2/9,10	Pi Tac	China	95	86	87	70	92	68	85	66	1908	1506	1347	1234
"	101664	E5/6,7	Ta Tao or Fei #2	"	96	86	84	—	96	89	86	89	1908	1506	1328	—
"	101668	E5/13	" #6	"	97	86	84	73	95	89	87	88	1908	1506	1328	1259
"	101676	E5/20,21	Ku Chua Hung #14	"	98	85	84	—	96	91	87	89	1912	1506	1328	—
"	101688	E10/7,8	Ta Tao or Fei #26	"	91	86	85	—	93	86	85	—	1898	1506	1334	—
"	106948	F3/114	Sdlg. of Mao Tao	" (2)	94	84	85	76	91	90	80	73	1908	1502	1334	1279
"	"	G4/38	" (F3/114)	"	95	87	82	72	94	91	85	72	1908	1517	1320	1251
"	"	N1/2	"	"	100	89	83	73	84	74	83	70	1914	1526	1326	1259
"	107838	J1/100	"	"	99	81	85	73	92	72	79	64	1914	1476	1334	1259
"	131209	E23/32,33	Pineapple (neot.)	England	91	84	86	79	89	91	85	77	1898	1502	1341	1314
86	101665	E5/8,9	Ta Tao or Fei #3	China	98	86	84	—	95	89	86	82	1912	1506	1328	—
"	101667	E5/10,11	" #5	"	98	86	84	—	96	90	86	91	1912	1506	1328	—
"	101669	E5/14,15	" #7	"	97	87	84	—	96	89	87	89	1908	1517	1328	—
"	101675	E5/18,19	Ku Chua Hung 13	"	98	86	84	—	95	92	87	91	1912	1506	1328	—
"	101677	E5/22,23	Ta Tao or Fei #15	"	98	86	86	—	95	89	87	—	1912	1506	1341	—
"	101680	E5/26,27	" #18	"	98	86	86	—	95	88	86	90	1912	1506	1341	—
"	101685	E5/34,35	" #23	"	94	86	87	—	93	88	87	—	1908	1506	1347	—
"	101686	E5/36	" #24	"	98	89	87	—	95	92	87	—	1912	1526	1347	—
"	"	D40/11	"	"	92	79	85	80	95	89	85	85	1898	1475	1334	1323
"	101687	E5/38,39	" #25	"	99	86	86	—	96	89	87	—	1914	1506	1341	—
"	107838	J1/104	Sdlg. of Mao Tao	" (2)	98	84	87	74	92	88	83	63	1912	1502	1347	1266
"	131431	E10/9	Milton (neot.)	England	92	85	85	79	86	76	83	70	1898	1506	1334	1314
"	132743	E19/37,38	Luckenbuser I	Germany	94	86	87	76	94	86	87	74	1908	1506	1347	1270
"	135995	E8/3,4	Russell's Red	England	95	84	85	78	90	76	87	67	1908	1502	1334	1295
87	101678	E5/24,25	Ta Tao or Fei #16	China	93	87	86	—	96	81	88	89	1912	1517	1341	—
"	101681	E5/28,29	" #19	"	90	80	86	—	94	88	86	86	1912	1506	1341	—
"	101682	E5/30,31	" #20	"	96	88	87	—	98	89	87	90	1908	1524	1347	—
"	101684	E5/32,33	" #22	"	98	88	87	—	94	87	77	—	1912	1524	1347	—
88	65977	E23/42,43	Giabella di Padova (neot.)	Italy	93	86	88	73	91	86	85	77	1905	1533	1349	1259
"	101674	E5/16,17	Ku Chua Hung #12	China	96	89	89	—	95	89	89	88	1908	1526	1361	—
"	105851	E11/40	Rowas Champion	Australia	96	86	80	78	95	81	88	—	1908	1506	1370	1235
96	141208	D40/12	A.persica, Rosa flore plena	England	96	86	87	96	96	80	85	79	1908	1533	1392	1377



TABLE 3. - Weather Data in Weekly Periods between November 1 and April 10 for the years 1948-49, 1949-50, 1950-51 and 1952-53.

Date	Average maximum and minimum temperature (degrees Fahrenheit)				Accumulative summations of precipitation (inches)				Accumulative summations of hours of temperature below 45 degrees Fahrenheit							
	1948-49		1949-50		1950-51		1952-53		1948-49		1949-50		1950-51		1952-53	
	max	min	max	min	max	min	max	min	1948-49	1949-50	1950-51	1952-53	1948-49	1949-50	1950-51	1952-53
Nov. 1 - 7	66	44	80	45	77	48	77	39	.53	.05	.07	-	34	17	0	47
8 - 14	72	37	64	45	67	44	66	45	.53	.93	.12	.75	87	47	18	58
15 - 21	61	39	73	39	60	52	60	35	1.33	.93	3.61	2.08	143	106	18	151
22 - 28	63	34	68	43	64	43	56	28	1.33	.93	3.66	2.08	223	128	54	266
29 - 5	56	34	62	38	53	42	52	38	2.58	1.03	7.34	5.69	329	206	117	351
Dec. 6 - 12	53	41	54	33	61	50	55	45	3.04	1.19	9.48	7.89	383	304	123	386
13 - 19	49	35	51	38	58	44	45	39	3.68	2.44	10.58	9.42	512	397	159	536
20 - 26	46	29	53	28	47	41	50	38	3.68	2.44	10.58	10.67	668	518	289	635
27 - 2	46	35	54	29	49	35	52	44	6.13	2.44	10.58	12.15	801	651	421	674
Jan. 3 - 9	49	25	47	26	54	40	55	45	6.13	3.28	11.03	14.90	942	805	503	738
10 - 16	52	21	45	33	51	37	58	46	6.13	5.85	13.04	16.11	1086	960	600	762
17 - 23	45	28	60	51	49	40	57	45	6.97	7.15	15.54	16.57	1248	970	689	808
24 - 30	52	25	48	30	47	37	60	37	6.97	8.06	15.65	16.57	1379	1117	807	878
31 - 6	48	31	51	33	53	38	65	42	7.71	11.63	17.18	16.59	1514	1204	880	913
Feb. 7 - 13	50	31	57	35	63	44	63	36	8.04	12.56	18.72	16.63	1618	1295	905	981
14 - 20	61	34	66	41	59	37	62	31	8.15	12.84	19.28	16.63	1686	1333	972	1066
21 - 27	62	44	70	49	62	35	66	35	8.81	12.84	19.76	16.63	1723	1363	1086	1138
28 - 6	56	44	68	42	50	34	67	32	11.52	12.87	20.27	16.97	1776	1392	1199	1222
Mar. 7 - 13	56	42	59	37	63	36	63	42	15.19	12.97	20.41	17.91	1828	1450	1265	1251
14 - 20	61	48	63	43	75	39	57	39	16.69	14.23	20.41	19.42	1837	1475	1303	1314
21 - 27	63	42	57	44	75	40	67	42	17.19	15.15	20.41	19.52	1869	1506	1341	1346
28 - 3	70	40	75	43	71	39	73	41	17.19	15.15	20.41	19.56	1905	1529	1386	1375
Apr. 4 - 10	79	46	62	44	78	46	65	40	17.19	16.73	20.41	19.97	1914	1550	1392	1428

