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TESTING GRAPE VARIETIES IN THE VINIFERA REGIONS OF THE UNITED STATES.

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INTRODUCTION.

A résumé of the viticultural investigations in the Vinifera regions of the United States up to 1910 was reported in Bulletin 172 of the Bureau of Plant Industry. The present publication supplements that bulletin and gives additional data on the investigations then under way, as well as reports upon researches started since the date of that publication. The fundamental problems of the Vinifera region, as determined by the early surveys, were found to require (1) a comprehensive test of the resistant varieties of vines to determine their adaptability to the different soils and climatic conditions; (2) a study of the congeniality of Vinifera varieties to the different resistant-stock varieties; (3) a study of the behavior of fruiting varieties to determine those best adapted to the different localities; and (4) a consideration of all classes of grapes with reference to their resistance to destructive insects and diseases and, if found necessary, the origination of an entirely new class of grapes better adapted to

Pacific coast conditions. These questions still remain the broad cardinal problems, but the facilities for their solution have been much enlarged and a number of subordinate problems that developed in the prosecution of the work have been taken up as far as the means and facilities of the Department of Agriculture permitted.

COOPERATIVE EXPERIMENT VINEYARDS AND THEIR NATURE.

To afford facilities for solving these problems, the Bureau of Plant Industry has established 12 experiment vineyards on the Pacific coast. One of these is at the Plant Introduction Field Station, Chico, Cal., and 11 are located in various other grape-growing centers in cooperation with growers.

A brief description of the purpose, location, soil, and climatic conditions at or near each of these vineyards follows. (Fig. 1.) Those desiring correlation and mechanical analyses of the soils and fuller climatic data are referred to Bulletin 172 of the Bureau of Plant Industry. The soil descriptions are from data furnished by the Bureau of Soils, while the weather data are taken from records furnished by the San Francisco office of the Weather Bureau, through Prof. McAdie, and from observations made in the experiment vineyards.

MAIN VINEYARDS.

Three primary vineyards of 20 acres each are located near Oakville, near Fresno, and at Guasti, Cal.

At the Oakville, Fresno, and Guasti experiment vineyards viticultural material introduced from foreign countries is tested. In these vineyards the adaptability to different localities and the value of grape varieties for different uses is determined; the relative resistance of grape varieties to destructive insects and diseases is inquired into; the congeniality of grape varieties to the different resistant sorts is determined; and grape varieties not now grown in the *Vinifera* regions of this country are tested, with a view to the possibility of their supplanting some of the varieties now grown. Experiments to determine how the various varieties should be propagated, grafted, pruned, trained, and otherwise cared for are under way. These vineyards offer some opportunity for the broad viticultural research and experimental work that is needed, and furnish practical object lessons in viticulture and facilities for solving some of the many commercial problems of the industry.

OAKVILLE EXPERIMENT VINEYARD.

The Oakville Experiment Vineyard (Pl. I, fig. 1) was established in the spring of 1903, and is located 1 mile west of Oakville, Napa Co., Cal., on the property of the To-Kalon Vineyard Company, at an elevation of 161 feet above sea level. The soil is a dark-brown or black

gravelly clay loam or heavy loam, containing a large quantity of organic matter formed in a swamp or lagoon extending in past geological ages up Napa Valley from San Pablo Bay, typical of the greater part of the soils in the valley floor. On weathering, the shales, sandstones, limestones, lime conglomerates, and large quantities of usually lenticular or angular gravel with little erosion of edges are washed down from the steep hills or mountains surrounding Napa Valley on

FIG. 1.—Map of California, showing (by large black dots) the location of the twelve experiment vineyards of the Bureau of Plant Industry.

all sides except the south, and tend to form a heavy or clayey soil with only small quantities of sand. No hardpan or alkali appears. The surface is undulating, affording a fairly rapid run-off of surplus rain-water, though in places the subsoil is quite wet during the spring months. No irrigation is necessary. The clay and silt in the subsoils greatly aid in retaining moisture in spite of the large quantity of

gravel (20 to 40 per cent) they contain. Cultivation reduces the surface to a good mulch. When grape culture in Napa Valley and the adjoining foothills became important, a reputation for the superior qualities of its dry wines was rapidly made, especially for the excellence of the white wines. This reputation has been sustained, and Napa County has remained one of the leading dry-wine sections of the State.

FRESNO EXPERIMENT VINEYARD.

The Fresno Experiment Vineyard (Pl. I, fig. 2) was established in the spring of 1903. It is located 3 miles east of Fresno on the property of the Fresno Vineyard Company, at an elevation of 290 feet above sea level. The soil is the San Joaquin sandy loam. The fact that it is an outlying isolated portion of soil of this character accounts for the increased depths to hardpan and the sandier subsoil immediately above. The San Joaquin sandy loams are confined to lands adjacent to the lower foothills on the eastern side of the San Joaquin and Sacramento Valleys, where 75,000 acres near Fresno, 6,000 acres near Stockton, and 265,000 acres about Sacramento have already been mapped. The soil is light red in color, granitic in origin, and composed largely of sharp, angular particles. The surface is rolling and generally covered with hog wallows and small mounds.

In the experiment-vineyard plat two varieties of soil were recognized, namely, adhesive sandy loam, closely approaching a true loam, and a friable sandy loam. The former retains moisture longer than the latter, which is a deeper soil of lighter texture. Leveling the plat disturbed the natural soil conditions, decreasing the depth of the sticky, adhesive sandy loam in spots and exposing free sandy loam in others, causing the hardpan underlying the plat to occur at depths varying from scarcely 20 inches to over 6 feet, whereas the average depth at which it occurs is $3\frac{1}{2}$ to 4 feet below the surface. This hardpan, which always accompanies San Joaquin sandy-loam soil, is a red iron-sandstone substance cemented by hydrates of iron and alumina combined with clay. When this occurs at 2 feet or less below the surface, blasting is necessary. Trees and vines thrive when the hardpan is broken or where it lies at a sufficient depth below the surface.

The soils of the plat above the hardpan contain alkali varying from less than 0.05 to more than 20 per cent; but in the lowest grade soil no alkali is visible. Of the salts, over 90 per cent are chlorids, as follows: Calcium, 50; magnesium, 25; sodium, 15; and potassium, about 2 per cent. The remainder consists of calcium sulphate and bicarbonate of soda. The depth of the water table on the tract averages 3 feet.

Fresno is in the center of the raisin industry of the country, and is also one of the most important wine and brandy producing districts of California.

At Oakville there are being assembled and tested on resistant stocks all the grape varieties of the world thought to be of value to the Pacific slope, while at Fresno similar tests are made of raisin, currant, and fleshy varieties.

GUASTI EXPERIMENT VINEYARD.

In view of the entirely different conditions prevailing south of the Tehachapi Pass, especially in the desert region, the Department of Agriculture in the spring of 1904 established another experiment vineyard of like importance and acreage in the San Bernardino desert, at Guasti, Cal., 950 feet above sea level, on the property of the Italian Vineyard Company. (See Pl. I, fig. 3.) The soil mapped as Maricopa gravelly sand is a gray-brown gravelly sand of very uniform texture to an unknown depth. The surface is compact when untilled, because the sharp, angular sand composing the soil becomes somewhat cemented by the organic matter occurring in the topsoil. At a depth of 3 feet the soil is more concentrated and often yellowish from the oxidation of iron in the soil. The soil is almost entirely granitic, and is washed from the Sierra Madres. It contains quantities of undecomposed potash, feldspar particles, which should insure abundant potash for the maturing of grapes. The soil covers most of the San Bernardino Valley floor, and when thoroughly cultivated holds moisture well, the fine sand and silt giving the soil capillary power to bring water up from below. Two of the largest vineyards of the world are in this valley, on similar soil. As the phylloxera is not known to exist here, the plantings in the experiment vineyard are principally Vinifera varieties.

CHICO VARIETAL VINEYARD.

The Chico Varietal Vineyard is located at the plant-introduction field station, 3 miles east of Chico, Butte Co., Cal., and is about 196 feet above sea level (Pl. II, fig. 1). The soil, an alluvium, is composed of material brought down from the mountains and hills on the east and is from 8 to 12 feet deep. It is underlain by a body of sandy water-worn gravel and bowlders, which always carry water. The soil is of light texture, varying from light loam to heavy, fine sandy loam, the heaviest being loam. It is well drained and easily cultivated. The heavy, fine sandy loam consists of from 30 to 36 inches of fine sandy loam, underlain by very fine sandy loam, usually containing some gravel. The light loam has from 10 to 15 inches of fine sandy loam or sandy loam underlain by a heavier structure closely approaching loam. The largest area of this soil is found about Chico, but similar soil occurs in the Feather and the Bear River Valleys.

At the Chico vineyard are being assembled and maintained two plants each of grape varieties that prove of special value for specific

purposes, together with grape immigrants from all parts of the world introduced by the Office of Foreign Seed and Plant Introduction. The first plantings were made in the spring of 1906, and the collection here already comprises 308 resistant and direct-producing sorts and 141 *Vinifera* varieties grafted on resistant stocks.

SMALLER VINEYARDS.

In addition to the main plantations, outlying vineyards of 10 acres each have been established to test varieties at different altitudes, at varying distances from the ocean, bays, and other bodies of water, under different climatic and other conditions, and on the leading types of vineyard soils not found at the Oakville, Fresno, and Guasti vineyards.

BRAWLEY EXPERIMENT VINEYARD.

The Brawley Experiment Vineyard was established in the spring of 1911 on the New River, 1 mile west of Brawley, Imperial Co., Cal., on the property of Mrs. Mabel Oakley, about 110 feet below sea level. (See Pl. II, fig. 2.) The soil, Imperial loam, is sediment brought down by the Colorado River and deposited in strata either while the area was still submerged or from the overflow waters as they spread over the plain. Before irrigation these strata, varying from 1.1 to 2 or 3 inches in thickness, are quite hard and look like shale, but water softens them readily. This soil after irrigation is a sticky reddish loam, a little heavier than a silt loam, having a depth of 4 to 6 feet and resting on a clay or clay-loam subsoil, which in turn is underlain by alternate strata of lighter and heavier material to an indeterminate depth. The surface is usually smooth and level and almost devoid of vegetation. The soil often contains considerable organic matter and when irrigated is productive. Alkali is found in all of it and often greatly in excess of what even the most resistant plants can stand, thus making much reclamation work necessary. This soil is by far the most extensive type in the Imperial Valley. It extends from about the middle of the eastern boundary across in a northwesterly direction into the Salton Sink. A large part of the area west and southwest of Imperial and large tracts between Mesquite Lake and the Mexican line are of this type of soil.

The Imperial Valley is said to be the earliest fruit-ripening district in the United States, and as no phylloxera have been located in it the plantings of 280 grape varieties in this vineyard are all *Vinifera*.

COLFAX EXPERIMENT VINEYARD.

The Colfax Experiment Vineyard was established in the spring of 1906, on the property of Mr. Louis Cortopassi, in the Sierra Nevada, 2,412 feet above sea level, 1½ miles southwest of Colfax, Placer Co., Cal. (See Pl. II, fig. 3.)

The soil, hilly, usually fairly deep, and well drained, originated in the decomposition of the Mariposa formation, consisting of dark shales or slates, sandstones or quartzite sandstones, and conglomerates. The large amount of iron present from decomposing volcanic-rock material, where exposed to perfect weathering, gives the soil a deep red color. Dark, shallow, conglomerate rocks sometimes outcrop in spots, and rock fragments occur. The first few inches are often dark red from the accumulation of organic matter. The first 8 to 18 inches are usually brownish red clay or clay loam, underlain by 3 to 6 feet of red clay or clay loam, with partially decomposed and weathered rock formations, giving the subsoil a yellow appearance.

Rock outcrops of conglomerates, chert, and slate occur in the higher portions. The native vegetation is manzanita, chaparral, live oak and yellow pine.

The Colfax district is unique in the diversity of the fruit grown on sidehill locations.

GEYSERVILLE EXPERIMENT VINEYARD.

The Geyserville Experiment Vineyard was established in the spring of 1904, on the property of John D. Bosch, just east of Geyserville, Sonoma Co., Cal., against a range of high hills (Pl. III, fig. 1), 236 feet above sea level. To a depth of $2\frac{1}{2}$ to 3 feet the soil consists of a uniform dark gravelly loam with a subsoil of light or yellowish brown color, similar in texture to the topsoil. The soil is very mellow and carries considerable humus, which enables it to retain moisture well. This type of soil extends over considerable areas along the streams and the floor of the Sonoma Valley, having been washed down from the shale, schist, and conglomerate hills.

Soils of this type produce some of the choicest dry wines, both red and white, of the State.

LIVERMORE EXPERIMENT VINEYARD.

The Livermore Experiment Vineyard was established in the spring of 1904, on the property of Mr. C. H. Wentz, 3 miles south of Livermore, Alameda Co., Cal., at an elevation of about 450 feet above sea level. (See Pl. III, fig. 2.) The vineyard has a very uniform, level, alluvial soil, derived from decomposed shales and schists, and is full of rounded gravel washed down from the surrounding mountains.

The surface soil is a dark-brown gravelly loam; the second, third, and fourth feet gravelly sandy loam, replaced by gravelly sand in the fifth foot. The humus decreases with the depth, while the gravel increases, varying from 30 to 59 per cent. The proportion of clay is greater than that of silt. This gives the soil a very heavy appearance, the gravel sticking together very tightly when dry or packed. No alkali exists, but ground water is encountered at 5 or 6 feet in some

places. These soils are common over the Livermore Valley and produce a superior white wine of the sauterne type. This experiment vineyard was discontinued on July 1, 1914.

LODI EXPERIMENT VINEYARD.

The Lodi Experiment Vineyard was established in the spring of 1904, on the Lawrence & Murray property, about one-fourth of a mile northeast of Lodi, San Joaquin Co., Cal., about 55 feet above sea level. (See Pl. III, fig. 3.) A large body of this soil exists between Lodi and Acampo.

There are two variations on the plat. Phase No. 1 is a brown, free, sandy loam, underlain below $4\frac{1}{2}$ feet by a more adhesive light-brown or yellowish sandy loam. Occasional iron concretions give the subsoil a mottled color. The soil has good capillarity and the water table occurs at 5 to 6 feet. Phase No. 2, an adhesive sand, was formed by an old stream channel. This is light-brown sand to a depth of 3 feet, the subsoil water-washed sand, much looser in texture and lighter in color, and dry to a depth of more than 6 feet, as the soil texture is too loose to exert much capillary force. There is no hardpan or alkali. The soils are, however, deficient in lime; otherwise, they are very productive, comparatively level, unirrigated, and easily tilled. This locality is well known for its table grapes and as a table-grape shipping point.

MOUNTAIN VIEW EXPERIMENT VINEYARD.

The Mountain View Experiment Vineyard was established in the spring of 1904, on the property of Mrs. Caroline Distel, 2 miles west of Mountain View, on the west side of the Santa Clara Valley, 76 feet above sea level. (See Pl. IV, fig. 1.)

The soil is a gravelly Placentia sandy loam. The first 12 inches is a dark-brown, gravelly sandy loam, dark from humus; below this, to 4 feet, the subsoil becomes redder, sandier, and more gravelly until sand is encountered. It is well drained, but inclined to become too dry in summer and fall. The surface soil at times becomes quite compact, and when plowed breaks up into hard clods. When tilled at the right time it works into a very mellow condition. These soils are from washings of granitic sandy shales and schist rocks. Before the destruction of vineyards by phylloxera and other agencies the Santa Clara Valley was the banner dry-wine producing section of California. The following areas of Placentia sandy loam have been surveyed in California: San Jose, 61,500; lower Salinas, 74,000; Los Angeles, 66,000; San Bernardino, 87,000; San Gabriel, 48,800; and Santa Ana, 16,800 acres. Soils of this series occur through the coast range of mountains from San Francisco to the Mexican line, occupying undulating portions of valleys close to the hills. The Mountain View Experiment Vineyard was discontinued on July 1, 1912.

FIG. 1.—OAKVILLE EXPERIMENT VINEYARD.

FIG. 2.—FRESNO EXPERIMENT VINEYARD.

FIG. 3.—GUASTI EXPERIMENT VINEYARD.

FIG. 1.—CHICO VARIETAL VINEYARD.

FIG. 2.—BRAWLEY EXPERIMENT VINEYARD.

FIG. 3.—COLFAX EXPERIMENT VINEYARD.

FIG. 1.—GEYSERVILLE EXPERIMENT VINEYARD.

FIG. 2.—LIVERMORE EXPERIMENT VINEYARD.

FIG. 3.—LODI EXPERIMENT VINEYARD.

FIG. 1.—MOUNTAIN VIEW EXPERIMENT VINEYARD.

FIG. 2.—SONOMA EXPERIMENT VINEYARD.

FIG. 3.—STOCKTON EXPERIMENT VINEYARD.

SONOMA EXPERIMENT VINEYARD.

The Sonoma Experiment Vineyard was established in the spring of 1904, on the property of the Gundlach-Bundschu Wine Company, about 2 miles south of Sonoma, Sonoma Co., Cal., about 110 feet above sea level. (See Pl. IV, fig. 2.) The soil is of rather poor quality, and to a depth of 8 or 10 inches is a gray loam more easily tilled than its texture indicates. The subsoil to 6 feet or more in depth is clay, changing at 4 feet, with an increase of sand, from a light-brown to a yellowish brown color. The soil is found near where weathered shales from the surrounding hills have been partially broken down and transported into the valleys, where they decompose. The soil usually occupies small, undulating ridges, or elevations, and is surrounded by the dark-brown, alluvial clay loam of the valley floor. The surface drainage is good, and no injurious quantity of alkali exists. This soil occupies extensive areas in the Sonoma Valley and in the adjacent bay regions and produces superior white wines of the Riesling, Chasselas, and Traminer types.

STOCKTON EXPERIMENT VINEYARD.

The Stockton Experiment Vineyard was established in the spring of 1907, on the property of the San Joaquin Valley Realty Company, a little over a mile southeast of Stockton, about 15 feet above sea level, on Stockton clay-loam adobe. (See Pl. IV, fig. 3.) This type, locally known as black adobe, was laid down in a swamp or tidal marsh in quiet water, the decomposing vegetation giving it a black color. It is a clay loam in texture, adhesive and sticky when wet and very hard when dry, cracking into large, cubical blocks full of small, cubical fractures. Sufficient rain slacks the clods readily. Cultivated when neither too wet nor too dry, the soil is friable and pulverizes well. The subsoil is a light-yellow silt loam, usually separated from the surface soil at a depth of $2\frac{1}{2}$ feet by a thin stratum, about one-half inch thick, of rather soft marly or calcareous hardpan, which is not always continuous and is often broken or disintegrated. Roots and water readily penetrate the subsoil, often passing through the hardpan. The depth to the water table varies from $3\frac{1}{2}$ to 6 feet for wet seasons and from 6 to 10 feet for dry seasons. This variation is influenced by a thin, marly hardpan which appears to hold the water down under pressure. It is somewhat difficult to establish vineyards on these soils, but when established they are very productive and lasting. Grapes for diverse purposes are grown on them. One of the largest sweet-wine establishments in the world is located near Stockton, and heavy shipments of table grapes grown on these soils are made. Soils of this type have been mapped in California as follows: Stockton, 53,312; Hanford, 5,470; and Fresno, 5,664 acres. It covers many thousand acres between the Marysville Buttes and about North Durham in the Sacramento Valley.

ACREAGE IN THE EXPERIMENT VINEYARDS IN CALIFORNIA.

The plantings and graftings in the California experiment vineyards now comprise the areas shown in Table I.

TABLE I.—*Size of the twelve experiment vineyards in California of the Bureau of Plant Industry and number of varieties planted in each.*

Vineyard.	Area.	Number of varieties.			Vineyard.	Area.	Number of varieties.		
		Resist- ants and direct pro- duc- ers.	Vinifera.				Resist- ants and direct pro- duc- ers.	Vinifera.	
			On their own roots.	On re- sistant stocks.				On their own roots.	On re- sistant stocks.
	<i>Acres.</i>					<i>Acres.</i>			
Brawley.....	2.1		209		Livermore.....	1.4	109		
Chico.....	1.8	308		141	Lodi.....	3.3	112		80
Colfax.....	3.5	122		74	Mountain View.....	2	124		
Fresno.....	9	187		137	Oakville.....	16.6	306		262
Geyserville.....	1.2	94		1	Sonoma.....	2	117		
Guasti.....	7	83	317		Stockton.....	1.4	91		

GENERAL PLAN OF PLANTINGS IN THE EXPERIMENT VINEYARDS.

All the plantings for comparative tests and study are made in regular checks of 10 vines of each variety, and all the larger plantings of resistant varieties are grafted in regular checks, usually of 10 vines each, and, where only preliminary readings are desired, the number of grafts of each variety put in have been a divisor of 10 in a check of 10 vines.

PHENOLOGICAL RECORDS.

Each vine or graft receives its block, row, and vine number. A complete history and accurate records are kept of all varieties from the time they are planted or grafted. Their behavior is closely noted, detailed descriptions are made of the vines and their respective fruits, and their value for specific uses and adaptability to different conditions are recorded. Table II summarizes the climatic observations made at the different vineyards.

TABLE II.—*Temperature and rainfall at the twelve experiment vineyards of the Bureau of Plant Industry in California.*

MAXIMUM TEMPERATURES (° F.).

Vineyard.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Brawley ¹	80	85	95	106	118	115	115	112	111	105	93	81	118
Chico.....	74	78	83	94	104	111	114	116	106	96	82	74	116
Colfax.....	73	88	89	86	98	110	107	108	99	91	82	78	110
Fresno.....	73	77	84	101	110	107	115	113	108	98	84	74	115
Geyserville.....	79	83	91	102	108	116	116	110	113	103	98	79	116
Guasti.....	83	87	88	98	101	105	108	106	105	98	89	80	108
Livermore.....	77	79	88	95	108	108	113	107	108	99	87	75	108
Lodi.....	70	72	80	91	104	104	110	104	105	91	78	67	110
Mountain View.....	76	76	85	94	104	106	111	99	109	95	84	75	111
Oakville.....	77	75	86	95	106	109	110	105	110	98	84	74	110
Sonoma.....	77	76	82	91	104	109	106	101	111	97	82	72	111
Stockton.....	67	70	80	89	102	105	110	103	104	90	84	66	110

¹ Data for four years.

TABLE II.—*Temperature and rainfall at the twelve experiment vineyards of the Bureau of Plant Industry in California—Continued.*

MINIMUM TEMPERATURES (° F.).

Vineyard.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	An-nual.
Brawley ¹	24	29	35	38	50	52	57	60	55	40	26	20	20
Chico.....	18	20	25	30	33	40	46	48	40	34	21	22	18
Colfax.....	14	19	24	25	30	34	44	38	34	24	18	16	14
Fresno.....	24	25	30	34	40	42	51	52	42	36	31	24	24
Geyserville.....	21	21	29	30	33	37	40	39	35	30	26	23	20
Guasti.....	26	26	30	32	36	39	42	42	44	39	30	26	26
Livermore.....	23	24	30	30	34	39	41	41	40	34	25	23	23
Lodi.....	22	24	30	33	38	43	45	44	40	31	25	21	21
Mountain View.....	25	23	29	29	34	36	40	39	37	30	27	24	23
Oakville.....	20	24	25	26	30	34	32	34	35	27	25	17	17
Sonoma.....	23	27	29	27	32	34	41	34	35	32	26	23	23
Stockton.....	24	24	32	36	40	40	48	42	42	36	25	20	20

MEAN TEMPERATURES (° F.).

Brawley ¹	54.2	54.3	62.2	69.2	76.3	84.2	89.5	89.3	83.4	71.3	60.9	51.1	70.4
Chico.....	46.3	49.6	53.0	58.9	65.3	73.0	79.4	77.5	71.4	63.9	52.8	45.8	61.4
Colfax.....	42.6	44.1	46.3	52.9	59.4	68.6	75.1	73.6	65.7	59.0	51.6	43.5	56.9
Fresno.....	47.6	50.9	55.4	60.8	66.4	74.5	81.8	80.2	73.1	64.4	54.3	45.7	62.9
Geyserville.....	47.4	50.3	52.8	57.8	62.4	67.2	69.8	68.2	67.0	62.2	53.9	47.7	58.9
Guasti.....	49.9	51.7	54.7	58.3	60.7	67.2	75.2	73.2	69.9	64.4	56.5	51.3	60.9
Livermore.....	48.0	51.0	53.5	57.2	60.5	66.0	70.9	69.8	68.3	62.8	54.5	48.8	59.3
Lodi.....	46.5	49.4	53.1	57.6	63.0	68.8	72.9	70.6	67.0	60.0	51.5	45.0	58.8
Mountain View.....	49.1	51.2	53.3	56.1	59.0	62.7	66.0	65.1	64.3	60.2	54.0	48.1	57.4
Oakville.....	45.4	48.3	50.4	55.1	59.7	64.1	66.8	65.8	65.1	60.8	52.3	45.5	56.6
Sonoma.....	47.3	50.1	51.7	55.5	59.4	63.8	66.2	64.5	64.2	60.6	52.9	46.3	56.8
Stockton.....	45.7	48.8	52.5	56.9	62.1	68.3	73.2	71.1	67.8	61.1	51.6	44.2	58.6

PRECIPITATION (INCHES²).

Brawley ³													
Chico.....	6.41	3.77	5.46	1.14	0.96	0.29	T	0.01	1.03	0.79	2.03	3.50	25.39
Colfax.....	13.12	7.78	11.02	3.00	2.59	.95	T	.002	1.14	2.39	4.98	6.39	53.36
Fresno.....	2.11	1.30	2.24	.77	.58	.03	.001	T	.30	.56	.72	1.26	9.87
Geyserville.....	11.08	6.85	9.49	1.40	1.30	.45	T	T	.96	1.59	3.88	5.24	42.25
Guasti.....	6.05	4.30	6.40	1.29	.93	.12	.02	.01	.44	.56	.87	3.14	24.13
Livermore.....	4.55	2.00	3.75	.65	.57	.19	T	.03	.31	.43	.90	2.47	15.86
Lodi.....	5.02	2.68	4.71	.80	1.56	.26	T	.003	.40	.55	1.14	2.94	20.06
Mountain View.....	4.47	2.46	4.45	.80	.54	.18	T	.04	.52	.51	.96	2.49	17.42
Oakville.....	8.07	4.42	6.57	1.10	.78	.26	T	.01	.78	.77	2.10	3.95	28.81
Sonoma.....	6.80	4.91	6.02	.74	.87	.25	.34	T	.82	.83	2.75	4.00	28.33
Stockton.....	4.24	2.12	3.62	.72	.68	.14	T	.01	.48	.42	.99	2.31	15.73

¹ Data for four years.² T=Trace.³ No data available.

In the care and maintenance of the California experiment vineyards and in prosecuting researches in them, Mr. George C. Husmann, Pomologist in Charge of Viticultural Investigations, is assisted by Mr. Fred L. Husmann, Viticultural Superintendent, and Mr. Richard Schmidt, Assistant in Viticulture.

DESTRUCTION OF VINEYARDS.

In Bulletin 172 of the Bureau of Plant Industry the writer gives an account of the havoc wrought by the phylloxera insect to the vineyards of the Old World as well as to those of the Vinifera regions of this country. Since that bulletin was issued additional heavy losses have occurred.

The destruction in California of once flourishing vineyards covering more than 200,000 acres, through the so-called California vine disease and other agencies, but most largely through phylloxera, has already occurred. All that has been suggested to combat and eradi-

cate the phylloxera has been tried in this and other countries, but it is conceded that, with the exception of vineyards which can be flooded cheaply and sufficiently to kill the insect, the only way successfully to reestablish *Vinifera* vineyards is by growing the vines on phylloxera-resistant stocks.

FACTORS IN RESISTANCE.

The resistance of vines to phylloxera depends upon two factors: (1) The inherent resistant character of the vine and (2) its adaptation to soil, climatic, and other conditions.

The inherent or natural characteristics of the plant repel or invite the attacks of the phylloxera. The number of swellings, nodosities, and tuberosities from insect punctures and the rotting of the root occasioned by them progress more or less rapidly and deeply in accordance with the texture and character of the root attacked. The weakening and ultimate death of the vine are determined by the extent of the punctures and the progress of the rot upon the roots.

The nodosities rot more or less rapidly in the different grape species. In the *Vinifera* they are larger and usually rot in a very short time. In the American species the nodosities are smaller and do not rot so quickly, various species differing in this respect. The number of nodosities varies greatly on the different vine varieties, and when the insects have multiplied sufficiently to cover the smaller rootlets with them, eventually the larger roots are attacked, and if cancerous patches of decomposition are found on the more developed roots tuberosities occur.

Some varieties have nodosities on practically all rootlets, while some of the American species are not injured by the phylloxera except that a few nodosities form on their roots. In fact, the resistant ratings of different species are based on a determination of the relative number and size of the nodosities found on their roots.

In order to indicate with some degree of definiteness the resistance to phylloxera (not the value of the stock), scientists have provisionally adopted an arbitrary scale of ratings. In this scale the maximum of resistance or immunity is taken as 20, while absence of resistance (or no resistance) is reckoned as zero.

The necessary degree of resistance for the production of good crops varies with the character of the soil, stocks rating above 16 being considered sufficient for all soils, 14 to 16 for fairly good soils, and 10 to 14 for rich, moist, sandy soils.

ADAPTATION TO SOIL, CLIMATIC, AND OTHER CONDITIONS.

The ability of a vine to withstand or resist the attacks of the phylloxera without serious injury is greatly influenced by the adaptability of the vine to the climatic and soil conditions under which it is grown. These may increase or diminish the vigor of the plant, retard or favor the reparation of the insect injuries, and affect

the resistance of the plant by favoring or hindering the dissemination or activity of the insect. For instance, climatic conditions affect the multiplication of the insect and it can travel but little in sandy soils of a certain fineness. Then again, a variety which in one locality has splendid resistant qualities perishes in another locality having a similar soil but a different climate or in another locality having a similar climate but a different soil.

This is due to the fact that some species are adapted to moist soils, while others are variously adapted to dry soils, deep soils, or shallow soils, and also to the fact that the root systems of different species vary in habit of growth, some assuming a horizontal and others a vertical position; some roots are thick and fleshy and others small and wiry; some are soft, while others are firm. (See Pl. V.) Thus, a moisture-loving variety or one having a horizontal root system would not thrive in a dry, hot climate; neither would a variety with a deep root system thrive in a shallow, hard soil, or one adapted to a dry location thrive in a wet soil. For such reasons, a variety grown under congenial soil and climatic conditions will often prove more resistant than one of greater natural resistance grown under adverse soil and climatic conditions.

Resistance to phylloxera is also influenced by the congeniality existing between vine varieties when grafted on other vine varieties. Causes like these, and there are many others, affect the resistant qualities of vines, and it is with the study of the adaptation of varieties to varying conditions and the congeniality existing between vine varieties that the researches reported in this bulletin are particularly concerned.

The European work in the selection and breeding of resistant stocks has been determined largely by the necessity that such stocks be adapted to calcareous-soil conditions rarely encountered in the present Vinifera regions of this country. This renders it necessary for us to undertake our own researches and determinations. The varying soil, climatic, and other conditions in California make the selecting of the right grape species in the reestablishing of vineyards on resistant stocks rather a complex matter.

Of the 23 species of grapes native to North America, the 14 shown in Table III have been found sufficiently resistant to merit the attention of the viticulturist, and they are under test in the experiment vineyards of the United States Department of Agriculture.

Table III shows their natural habitat, the locations, sites, and the character of soil they prefer, the habits of the vines, their relative season of leafing (Pls. VI and VII), their root systems (Pl. V), the flowering and ripening of their fruit, the ease or difficulty of propagating them, their suitability for either bench or field grafting, and their relative resistance to phylloxera, cold, dampness, heat, and drought.

TABLE III.—*Cultural data of fourteen American species of grapes whose varieties or hybrids are under test as resistant stocks in twelve experiments vineyards in California.*¹

Name and region of nativity.	Preferred location.	Vine.	Roots.	Season of leafing, flowering, and ripening.	Percentage of cuttings taking root.	Grafting adaptation.	Resistance to—			
							Phylloxera (out of a possible 20).	Cold.	Dampness.	Heat.
<i>Vitis labrusca</i> (northern fox grape): Allegheny Mountains, from New England to South Carolina.	Wet thickets; granitic soils	Vigorous, medium-sized climber.	Large, fleshy.	Very late.	85	B F 1	5	VG.	.....	F..
<i>V. candicans</i> (mustang grape): Oklahoma, Texas, and New Mexico.	Black waxy lands or adobe	Moderately vigorous, medium climber.	Vigorous, tender.	Medium early.	30	F...	15	F...	F..	G..
<i>V. aestivalis</i> (summer grape): Southern New York to Florida; westward to the Mississippi and Missouri Rivers.	High, warm, gravelly, moist soils.	Vigorous, medium-sized climber.	Rather large, hard, plunging.	Medium late.	50	F...	14	VG.	.....	G..
<i>V. insecomii</i> (post-oak or turkey grape): Texas.	High, well drained timber lands, granitic gravelly clay, compact, deep, rich river-bank soils.	Vigorous, good-sized climber.	Medium size, hard, and long.	do.....	40	F...	14	F...	.....	G..
<i>V. monticola</i> (sweet mountain grape): Texas.	Low limestone hills; does moderately well in sandy soils.	Rather small; good grower.	Bushy, plunging.	do.....	65	F B.	18	F...	.....	G..
<i>V. berlandieri</i> (little mountain grape): Texas and Mexico.	Tops, sides, and bottoms of limestone hills.	Slender; medium grower.	Strong and plunging.	Late.	40	F...	19	F...	.....	G..
<i>V. cordifolia</i> (frost or sour winter grape): Great Lakes to Florida, abundant in Illinois, Tennessee, Missouri, and Arkansas.	Deep, rich, loose soils on river banks.	Vigorous, strong climber.	Strong, hard, caraceous.	do.....	25	F...	18	VG.	F..	G..
<i>V. cinerea</i> (sweet winter or ashy grape): Illinois to Texas.	do.....	Vigorous, strong grower.	Large, fleshy, plunging	Very late.	25	F...	15	F...	G..	.....
<i>V. champini</i> (adobe-land grape): Texas.	Limestone hills; adapts itself to a variety of soils.	Vigorous, spreading grower.	Large, ramified, plunging.	Early to medium.	80	F B.	12	F...	G..	G..

<i>V. doaniana</i> (Texas Panhandle large grape): Texas.....	Sandy, limy soils.....	Slender, fair grower....	Numerous, thick, deeply penetrating.	Early.....	60	F...	12	F...	G...	G.....
<i>V. longii</i> (Solonch, bush or gulch grape): Texas Panhandle, New Mexico, Kansas, and Colorado.	Ravines along streams. Cretaceous, generally rich, sandy, moist, always fresh soils.	Bushy, upright, vigorous grower.	Large, ramified, horizontal, hard.	do.....	60	F...	14	F...	G...	G.
<i>V. rupestris</i> (sand, sugar, or rock grape): From the Rio Grande in Texas northwesterly into Oklahoma, northwestern Arkansas, southern Missouri, Kentucky, and Tennessee; Cumberland Mountain in north to Pennsylvania.	Open places in poor soils and along gravelly banks and ravines.	Vigorous, short, bushy grower.	Long, slender, or strong, plunging.	Very early.....	80	B...	19	G...	G.....	G.
<i>V. vulpina</i> (riparia or riverside grape): From Salt Lake east and from Texas north in all the States as far as 90 miles north of Quebec.	Moist, loose, sandy soils along creeks and river bottoms.	Vigorous; medium size.	Long, thin, slender, hard, wiry, ramified.	do.....	85	FB.	19	VG.	G...	...
<i>V. bicolor</i> (blue grape): Northern Missouri, Illinois, Wisconsin, Indiana, Michigan, Ohio, Kentucky, Pennsylvania, New York, New Jersey, Maryland, and Ontario.	Black sandy and red siliceous soils.	Fair grower.....	Rather hard, large, plunging.	Late.....	40	F...	16	VG.	G...	G.

¹ Abbreviations used in table: Under grafting, B for bench, F for field; under resistance, F for fair, G for good, and V for very.

HYBRIDS.

In the attempts to secure resistant stocks suited to soil, climatic, and other conditions which at the same time would prove congenial, lasting, and productive stocks on which to graft the *Vinifera* varieties, many difficulties were encountered. For instance, the stock may be adapted to the soil, but it may be so hard to root as to make its commercial use impracticable. Again, the stock may be suited to the soil and it may root easily and be resistant, but not congenial to or make a lasting junction with *Vinifera* varieties; or the congeniality of the variety may be good, but the fruitfulness of the graft may be impaired.

In many cases also no resistant species are exactly suited to the soil and climatic conditions. To overcome such difficulties and others of like nature, hybrids have been and are being produced, in the breeding of which such of the native American species were selected as possess the various qualities desired. (See Pls. VIII and IX.) In this work some remarkable successes have been achieved, such, for instance, as *Riparia* × *Rupestris*, No. 101; *Riparia* × *Rupestris*, No. 3306; *Riparia* × *Rupestris*, No. 3309; *Solonis* × *Othello*, No. 1616; *Rupestris* × *Cordifolia*, Nos. 107–11; *Riparia* × (*Cordifolia* × *Rupestris*), Nos. 106–8; *Rupestris* × *Berlandieri*, No. 301A; *Berlandieri* × *Riparia*, No. 420A; and *Monticola* × *Riparia*, No. 18808.

Efforts have also been made to produce hybrids between the *Vinifera* and American native-grape varieties which would be resistant to phylloxera and at the same time give satisfactory crops of fruit of desirable character and quality. (See Pl. X, fig. 2.) By having such direct producers, the cost of grafting would not only be avoided, but congeniality would not have to be reckoned with. Some remarkable strides are being made along this line. A number of these hybrids are under test in the experiment vineyards, but so far it is not possible to say that any of them are better than or equal to some of our finer varieties of native American grapes or that they have as good phylloxera-resistant qualities.

GROWTH RATINGS OF RESISTANT VINES AND DIRECT PRODUCERS.

In Table IV the upper numbers after each name in the columns headed "Experiment vineyard" show the years when the vines were planted; the lower numbers show the growth ratings, which in all cases were made in the autumn of 1913.

The growth or adaptability of each variety at each vineyard where it is under test is expressed in the form of a percentage rating on a scale in which the growth of the variety under conditions for which it is well adapted is taken as the standard of excellence, 100 per cent.

VARIOUS TYPES OF GRAPE ROOT SYSTEMS.

FIG. 1.—Roots of the fleshy type. FIG. 2.—Roots of the shallow or spreading type. FIG. 3.—Roots of the deep-striking type. FIG. 4.—Roots of the oblique type.

LEAVES OF FOUR NATIVE AMERICAN SPECIES OF GRAPES USED AS STOCKS ON WHICH TO GRAFT VINIFERA VARIETIES.

FIG. 1.—*Vitis champini*, upper and lower side of leaf, one-fourth natural size. FIG. 2.—*Vitis doaniana*, upper and lower side of leaf, one-sixth natural size. FIG. 3.—*Vitis candicans*, upper and lower side of leaf, one-fourth natural size. FIG. 4.—*Vitis berlandieri*, upper and lower side of leaf, one-sixth natural size.

LEAVES OF FOUR NATIVE AMERICAN SPECIES OF GRAPES EXTENSIVELY USED AS STOCKS ON WHICH TO GRAFT VINIFERA VARIETIES.

FIG. 1.—*Vitis rupestris*, upper and lower side of leaf, one-fourth natural size. FIG. 2.—*Vitis aestivalis*, upper and lower side of leaf, one-fourth natural size. FIG. 3.—*Vitis labrusca*, upper and lower side of leaf, one-seventh natural size. FIG. 4.—*Vitis riparia*, upper and lower side of leaf, two-fifths natural size.

LEAVES OF FOUR GRAPE HYBRIDS USED AS STOCKS ON WHICH TO GRAFT VINIFERA VARIETIES.

FIG. 1.—*Monticola* × *Riparia* No. 18808, upper and lower side of leaf, one-sixth natural size. FIG. 2.—*Cordifolia* × *Riparia* No. 125-1, upper and lower side of leaf, one-eighth natural size. FIG. 3.—*Berlandieri* × *Riparia* No. 420A, upper and lower side of leaf, one-sixth natural size. FIG. 4.—*Linsecomii* × (*Labrusca* × *Vinifera*), upper and lower side of leaf, one-eleventh natural size.

LEAVES OF FOUR GRAPE HYBRIDS ORIGINATED IN FRANCE AND EXTENSIVELY USED AS STOCKS ON WHICH TO GRAFT VINIFERA VARIETIES.

FIG. 1.—*Riparia* × *Rupestris* No. 3306, upper and lower side of leaf, one-eighth natural size.
 FIG. 2.—*Mourvedre* × *Rupestris* No. 1202, upper and lower side of leaf, five-sixteenths natural size.
 FIG. 3.—*Riparia* × *Rupestris* No. 101, upper and lower side of leaf, five-fourteenths natural size.
 FIG. 4.—*Riparia* × *Rupestris* No. 3309, upper and lower side of leaf, one-third natural size.

FIG. 2.—A DIRECT PRODUCER ON ITS OWN ROOTS (ALICANTE GANZIN).

FIG. 1.—A VINIFERA ON RESISTANT STOCK (HUNISA GRAFTED ON DOG RIDGE).

These adaptability ratings therefore represent the behavior of each variety under the conditions existing at the several vineyards expressed in terms that permit comparison with its behavior elsewhere. They are not based on a comparison with other varieties in the same vineyard. Each variety is therefore rated on a scale based on its own standard of excellence rather than on any arbitrary scale formulated for application to all varieties. It is believed that this method renders possible a truer expression of the reaction of each variety to different soil and climatic conditions than would be possible by using any arbitrary scale of measurement of growth.

To illustrate, Aramon $\times$ Rupestris Ganzin, No. 2, planted at each of three experiment vineyards in 1904, at Fresno was rated 97; at Livermore, 83; and at Lodi, only 46. This shows that at Fresno the growth was very satisfactory, and it was therefore rated at 97. At Livermore the growth was good, but not nearly so good as at Fresno; it was therefore rated at 83. At Lodi it made a very poor growth, which as compared with the growth made at Fresno was as 46 to 97, or when compared to perfect growth as 46 to 100, i. e., 46 per cent.

TABLE IV.—*Resistant and direct-producing varieties of grapes in eleven experiment vineyards in California, showing the year of planting in each vineyard and the relative growth rating.*

Variety.	Experiment vineyard.										
	Chico.	Colfax.	Fresno.	Geyserville.	Guasti.	Livermore.	Lodi.	Mountain View.	Oakville.	Sonoma.	Stockton.
Adobe Giant:											
Year of planting	1906	1906	1903	1904	.....	.....	.....	.....	1903	1907	1907
Growth rating	89	93	85	85	.....	.....	.....	.....	90	90	87
(Aestivalis $\times$ Monticola) $\times$ (Riparia $\times$ Rupestris, No. 554-5):											
Year of planting	1906	1906	1904	1904	.....	.....	1904	.....	1904	1904	1908
Growth rating	96	87	93	92	.....	.....	92	.....	95	89	89
(Aestivalis $\times$ Rupestris) $\times$ Riparia, No. 227:											
Year of planting	1906	.....	.....	.....	.....	.....	.....	1905	1905	1905	.....
Growth rating	82	.....	.....	.....	.....	.....	.....	81	95	89	.....
Aramon $\times$ Rupestris Ganzin, No. 1:											
Year of planting	1907	1906	1913	1904	.....	1904	1904	1904	1904	1904	1908
Growth rating	99	94	.....	98	.....	96	98	93	98	90	85
Aramon $\times$ Rupestris Ganzin, No. 2:											
Year of planting	1907	1906	1904	1904	1907	1904	1904	1904	1904	1904	1908
Growth rating	93	93	97	97	87	83	46	94	98	92	83
Aramon $\times$ Rupestris Ganzin, No. 9:											
Year of planting	1906	.....	1904	1904	.....	1904	1905	1904	1904	1904	1907
Growth rating	98	.....	95	71	.....	88	94	67	78	94	95
Aramon $\times$ Riparia, No. 143A:											
Year of planting .....	.....	.....	1904	.....	.....	.....	.....	.....	1904	.....	1907
Growth rating .....	.....	.....	96	.....	.....	.....	.....	.....	87	.....	95
Arizona Phoenix:											
Year of planting	1912	.....	.....	.....	1905	.....	.....	.....	.....	.....	.....
Growth rating	20	.....	.....	.....	94	.....	.....	.....	.....	.....	.....
Australis:											
Year of planting	1906	1906	1903	1904	.....	1904	1904	1907	1903	1904	1908
Growth rating	91	90	97	92	.....	89	90	60	89	92	89
Barnes:											
Year of planting	1906	1906	1903	.....	1907	1907	.....	1907	1903	.....	1907
Growth rating	95	88	94	.....	95	87	.....	51	99	.....	91
Berlandieri, No. 1:											
Year of planting	1906	1906	1904	1904	.....	1904	1904	1904	1904	1904	.....
Growth rating	88	81	88	85	.....	60	72	78	83	84	.....

TABLE IV.—*Resistant and direct-producing varieties of grapes in eleven experiment vineyards in California, showing the year of planting in each vineyard and the relative growth rating—Continued.*

Variety.	Experiment vineyard.										
	Chico.	Collax.	Fresno.	Geyserville.	Guastl.	Livermore.	Lodi.	Mountain View.	Oakville.	Sonoma.	Stockton.
Berlandieri, No. 2:											
Year of planting.....	1906	1906	1904	1906	.....	.....	.....	.....	1909	.....	.....
Growth rating.....	89	79	65	76	.....	.....	.....	.....	85	.....	.....
Berlandieri Lafont, No. 9:											
Year of planting.....	1906	.....	1904	1904	.....	1905	1905	1904	1904	1904	.....
Growth rating.....	88	.....	71	93	.....	83	66	72	86	77	.....
Berlandieri X Riparia, No. 33											
E. M.:											
Year of planting.....	1907	1906	1904	.....	.....	.....	1904	1904	1904	.....	1907
Growth rating.....	92	83	77	.....	.....	.....	68	70	93	.....	74
Berlandieri X Riparia, No. 34											
E. M.:											
Year of planting.....	1906	1906	1903	1904	.....	1907	.....	1904	1903	1907	1907
Growth rating.....	90	90	87	91	.....	85	.....	66	93	87	86
Berlandieri X Riparia, No. 157-11:											
Year of planting.....	1907	1906	1904	1904	.....	.....	1904	1904	1904	.....	1907
Growth rating.....	99	86	81	89	.....	.....	76	75	92	.....	82
Berlandieri X Riparia, No. 420A:											
Year of planting.....	1907	1907	1903	1904	1905	1910	1904	1904	1903	1905	1907
Growth rating.....	97	95	93	75	91	33	93	88	98	92	87
Berlandieri X Riparia, No. 420B:											
Year of planting.....	1912	1907	1904	.....	.....	1907	1907	1904	1904	.....	.....
Growth rating.....	10	90	85	.....	.....	85	87	64	88	.....	.....
(Bourisquou X Rupestris, No. 601)											
X Calicola, No. 13205:											
Year of planting.....	1906	.....	1913	1907	.....	1905	.....	1907	1905	.....	.....
Growth rating.....	95	.....	91	93	.....	91	.....	.....	94	.....	.....
Cabernet X Berlandieri, No. 333:											
Year of planting.....	.....	.....	1903	1904	.....	1904	.....	1904	1903	.....	1907
Growth rating.....	.....	.....	86	91	.....	77	.....	91	94	.....	84
Cabernet X Rupestris Ganzin, No. 33A:											
Year of planting.....	1909	.....	1904	1904	1907	1904	1904	1904	1904	1905	.....
Growth rating.....	85	.....	94	93	85	87	82	83	92	72	.....
Chasselas X Berlandieri, No. 41B:											
Year of planting.....	1906	.....	1904	1904	.....	.....	.....	1904	1906	1907	1907
Growth rating.....	90	.....	81	94	.....	.....	.....	69	87	84	91
(Cinerea X Rupestris) X Riparia, No. 229:											
Year of planting.....	1906	.....	1905	.....	.....	.....	.....	.....	1905	.....	1908
Growth rating.....	88	.....	87	.....	.....	.....	.....	.....	90	.....	82
Columbaud X Riparia, No. 2502:											
Year of planting.....	1906	.....	1904	.....	.....	1907	1907	1907	1904	1907	1907
Growth rating.....	99	.....	89	.....	.....	74	86	80	89	89	92
Columbaud X Rupestris:											
Year of planting.....	.....	.....	.....	.....	.....	1907	.....	.....	1903	1907	.....
Growth rating.....	.....	.....	.....	.....	.....	94	.....	.....	96	90	.....
Constantia:											
Year of planting.....	1907	1907	1905	.....	1905	.....	.....	.....	1904	.....	1907
Growth rating.....	79	94	96	.....	98	.....	.....	.....	99	.....	96
Cordifolia X Riparia, No. 125-1:											
Year of planting.....	1906	.....	1904	.....	.....	1906	1906	.....	1904	1907	.....
Growth rating.....	90	.....	98	.....	.....	81	84	.....	95	84	.....
Cordifolia X Rupestris:											
Year of planting.....	1906	.....	1905	.....	.....	1905	.....	1905	.....	.....	.....
Growth rating.....	89	.....	77	.....	.....	88	.....	60	.....	.....	.....
Dog Ridge:											
Year of planting.....	1906	1906	1903	1904	1905	1904	1904	1904	1903	1904	1907
Growth rating.....	97	96	89	97	97	94	94	98	97	97	85
Hotporup:											
Year of planting.....	1907	.....	1903	1904	.....	1904	1904	1904	1903	1904	.....
Growth rating.....	97	.....	83	89	.....	84	93	74	90	92	.....
Judge:											
Year of planting.....	1906	1906	1903	1907	1907	1906	1907	1907	1903	1907	.....
Growth rating.....	85	85	93	77	84	66	83	80	90	86	.....
Lenoir:											
Year of planting.....	1906	1906	1904	1904	1905	1904	1904	1904	1903	1904	1907
Growth rating.....	100	93	77	95	97	86	96	94	98	95	90
Monticola X Riparia, No. 554:											
Year of planting.....	1912	.....	1904	1904	.....	1904	1904	1904	1904	1904	1907
Growth rating.....	40	.....	88	82	.....	84	87	80	98	87	88

TABLE IV.—*Resistant and direct-producing varieties of grapes in eleven experiment vineyards in California, showing the year of planting in each vineyard and the relative growth rating—Continued.*

Variety.	Experiment vineyard.										
	Chico.	Collax.	Fresno.	Geyserville.	Guasti.	Livermore.	Lodi.	Mountain View.	Oakville.	Sonoma.	Stockton.
Monticola × Riparia, No. 18804:											
Year of planting.....	1906	1906	1904	.....	.....	1905	1904	1904	1904	1904	1907
Growth rating.....	95	84	94	.....	.....	90	91	81	89	91	85
Monticola × Riparia, No. 18808:											
Year of planting.....	1907	1906	1904	.....	.....	1905	1904	1904	1904	1904	1907
Growth rating.....	97	90	94	.....	.....	90	88	86	91	93	93
Monticola × Riparia, No. 18815:											
Year of planting.....	1906	1906	1904	.....	.....	1904	1905	1904	1904	1904	1908
Growth rating.....	96	92	95	.....	.....	95	90	86	93	95	92
Motley:											
Year of planting.....	1906	1906	.....	1904	.....	1906	1906	1904	1903	1906	.....
Growth rating.....	90	92	.....	81	.....	76	96	90	86	88	.....
Mourvedre × Rupestris, No. 1202:											
Year of planting.....	1906	1906	1903	1904	1905	1904	1904	1904	1903	1904	1907
Growth rating.....	93	97	100	99	94	98	97	95	100	92	95
Mourvedre × Rupestris, No. 1203:											
Year of planting.....	1906	1907	1904	1906	.....	1906	1906	.....	1906	1906	.....
Growth rating.....	99	91	98	88	.....	81	91	.....	98	80	.....
No name, No. 1:											
Year of planting.....	.....	.....	.....	.....	.....	.....	.....	.....	1905	.....	.....
Growth rating.....	.....	.....	.....	.....	.....	.....	.....	.....	95	.....	.....
No name, No. 2:											
Year of planting.....	.....	.....	.....	.....	.....	.....	.....	.....	1905	.....	.....
Growth rating.....	.....	.....	.....	.....	.....	.....	.....	.....	95	.....	.....
No name, No. 3:											
Year of planting.....	.....	.....	.....	.....	.....	.....	.....	.....	1905	.....	.....
Growth rating.....	.....	.....	.....	.....	.....	.....	.....	.....	94	.....	.....
Pinot Bouschet × Riparia, No. 3001:											
Year of planting.....	1907	.....	1904	.....	.....	.....	.....	.....	1904	1907	1907
Growth rating.....	91	.....	96	.....	.....	.....	.....	.....	90	82	83
Pinot × Rupestris, No. 1305:											
Year of planting.....	1907	1907	1909	1904	1907	1904	1904	1904	1904	1904	1907
Growth rating.....	99	93	99	93	89	96	93	94	98	95	94
Ramsey:											
Year of planting.....	1906	1907	1903	.....	1907	1910	1907	1906	1903	.....	.....
Growth rating.....	90	89	94	.....	88	85	92	94	98	.....	.....
Riparia du Colorado:											
Year of planting.....	1906	.....	1903	1904	1907	1905	1904	1904	1903	1904	.....
Growth rating.....	82	.....	72	83	82	51	91	66	66	71	.....
Riparia France:											
Year of planting.....	1906	.....	1904	.....	1907	1904	1904	.....	.....	1904	1907
Growth rating.....	51	.....	97	.....	84	74	79	.....	.....	86	87
Riparia Gloire:											
Year of planting.....	1906	1906	1903	.....	1905	1904	1907	.....	1903	1904	1907
Growth rating.....	87	86	85	.....	93	82	77	.....	88	85	75
Riparia Grand Glabre:											
Year of planting.....	1909	.....	1904	.....	1905	1904	1904	1904	1903	1904	1907
Growth rating.....	56	.....	92	.....	85	82	82	74	86	89	83
Riparia Martineau:											
Year of planting.....	1906	.....	.....	.....	.....	.....	.....	.....	1904	.....	.....
Growth rating.....	92	.....	.....	.....	.....	.....	.....	.....	86	.....	.....
Riparia Ramond:											
Year of planting.....	1912	.....	.....	.....	1905	.....	.....	.....	.....	1906	.....
Growth rating.....	60	.....	.....	.....	92	.....	.....	.....	.....	86	.....
Riparia Selected:											
Year of planting.....	.....	.....	.....	.....	.....	.....	.....	.....	1905	.....	.....
Growth rating.....	.....	.....	.....	.....	.....	.....	.....	.....	89	.....	.....
Riparia × Berlandieri, No. 161-49:											
Year of planting.....	1906	1907	.....	.....	.....	.....	.....	1907	1904	.....	.....
Growth rating.....	95	91	.....	.....	.....	.....	.....	87	90	.....	.....
Riparia × (Cordifolia × Rupestris), No. 106-8:											
Year of planting.....	1906	1906	1910	1904	.....	1904	1904	1904	1910	1904	1907
Growth rating.....	88	86	93	86	.....	76	85	72	92	90	91
Riparia Grand Glabre × Aramon											
Rupestris, No. 4110:											
Year of planting.....	1906	.....	1904	.....	.....	1904	1904	.....	1904	1904	.....
Growth rating.....	73	.....	89	.....	.....	92	91	.....	91	91	.....
Riparia × Rupestris, No. 101:											
Year of planting.....	1906	1906	1904	1904	.....	1904	1904	1904	1904	1904	1907
Growth rating.....	85	81	95	96	.....	91	97	65	93	89	91

TABLE IV.—*Resistant and direct-producing varieties of grapes in eleven experiment vineyards in California, showing the year of planting in each vineyard and the relative growth rating—Continued.*

Variety.	Experiment vineyard.										
	Chico.	Colfax.	Fresno.	Geyersville.	Guasti.	Livermore.	Lodi.	Mountain View.	Oakville.	Sonoma.	Stockton.
Riparia × Rupestris, No. 101-14:											
Year of planting.....	1906	1906	1904	1904	1905	1904	1904	1904	1904	1904	1907
Growth rating.....	92	92	93	90	72	90	98	86	94	90	91
Riparia × Rupestris, No. 3306:											
Year of planting.....	1906	1906	1904	1904	1907	1904	1904	1904	1904	1904	1907
Growth rating.....	91	92	74	96	89	77	80	91	93	93	93
Riparia × Rupestris, No. 3309:											
Year of planting.....	1906	1906	1904	1904	1907	1904	1904	1904	1903	1904	1907
Growth rating.....	89	95	95	97	88	79	94	88	92	91	70
Riparia × Rupestris, No. 108-103:											
Year of planting.....	1906	1906	1904	1904	1907	1904	1904	1904	1903	1904	1907
Growth rating.....	91	92	74	96	89	77	80	91	93	93	93
Riparia × Rupestris de Jaeger:											
Year of planting.....	1909	1906	1904	1904	1907	1904	1907	1904	1904	1904	1907
Growth rating.....	67	91	94	97	86	79	70	91	87	91	82
Riparia × (Rupestris × Aramon) Jaeger, No. 201:											
Year of planting.....	1906	1906	1904	1904	1907	1904	1904	1904	1904	1904	1907
Growth rating.....	99	94	85	95	82	95	93	67	96	89	95
Riparia × Rupestris Ramond:											
Year of planting.....	1906	1906	1904	1904	1907	1904	1904	1904	1904	1904	1907
Growth rating.....	87	94	85	95	82	95	93	67	96	89	95
Rupestris des Caussettes:											
Year of planting.....	1906	1906	1903	1904	1905	1904	1904	1904	1903	1904	1907
Growth rating.....	95	94	91	90	92	85	90	78	91	89	90
Rupestris des Semis, No. 81-2:											
Year of planting.....	1907	1906	1904	1904	1907	1904	1904	1904	1903	1904	1907
Growth rating.....	100	90	96	95	92	85	90	78	91	89	90
Rupestris Ganzin:											
Year of planting.....	1906	1906	1904	1904	1907	1904	1904	1904	1904	1904	1907
Growth rating.....	86	94	85	95	82	95	93	67	96	89	95
Rupestris le Reux:											
Year of planting.....	1906	1906	1904	1904	1907	1904	1904	1904	1904	1904	1907
Growth rating.....	93	94	85	95	82	95	93	67	96	89	95
Rupestris Martin:											
Year of planting.....	1906	1907	1903	1904	1905	1904	1904	1903	1903	1904	1907
Growth rating.....	92	83	77	95	79	92	92	75	92	90	89
Rupestris Metallica:											
Year of planting.....	1906	1906	1903	1904	1905	1904	1904	1904	1903	1906	1907
Growth rating.....	99	92	90	95	95	93	93	82	97	89	90
Rupestris Mission:											
Year of planting.....	1906	1906	1904	1904	1907	1904	1904	1904	1903	1904	1907
Growth rating.....	91	86	79	85	92	88	87	74	85	81	81
Rupestris Othello:											
Year of planting.....	1906	1906	1904	1904	1907	1904	1904	1904	1903	1904	1907
Growth rating.....	98	94	87	95	92	88	87	74	85	81	81
Rupestris Pillans:											
Year of planting.....	1906	1906	1905	1906	1905	1905	1905	1905	1905	1905	1907
Growth rating.....	99	92	96	83	95	92	93	80	87	82	87
Rupestris St. George:											
Year of planting.....	1906	1906	1903	1904	1905	1904	1904	1904	1903	1904	1907
Growth rating.....	94	99	96	97	95	98	98	87	100	87	97
Rupestris × Berlandieri, No. 219A:											
Year of planting.....	1907	1906	1902	1904	1905	1904	1904	1904	1903	1904	1907
Growth rating.....	75	90	82	85	85	88	91	73	83	86	90
Rupestris × Berlandieri, No. 301A:											
Year of planting.....	1907	1906	1903	1904	1905	1904	1904	1904	1903	1904	1907
Growth rating.....	100	83	85	92	95	93	93	82	97	89	90
Rupestris × Berlandieri, No. 301B:											
Year of planting.....	1906	1907	1904	1904	1907	1904	1904	1904	1903	1904	1907
Growth rating.....	92	94	87	95	92	88	87	74	85	81	81
Rupestris × Berlandieri, No. 301-37-152:											
Year of planting.....	1906	1907	1904	1904	1907	1904	1904	1904	1903	1904	1907
Growth rating.....	91	89	90	95	92	88	87	74	85	81	81
Rupestris × Chasselas Rose, No. 4401:											
Year of planting.....	1906	1906	1903	1904	1905	1904	1904	1904	1903	1904	1907
Growth rating.....	91	96	96	97	95	98	98	87	100	87	97
Rupestris × Cinerea:											
Year of planting.....	1909	1907	1904	1904	1907	1904	1904	1904	1903	1904	1907
Growth rating.....	60	89	90	95	92	88	87	74	85	81	81

TABLE IV.—*Resistant and direct-producing varieties of grapes in eleven experiment vineyards in California, showing the year of planting in each vineyard and the relative growth rating—Continued.*

Variety.	Experiment vineyard.										
	Chico.	Colfax.	Fresno.	Geyserville.	Guasti.	Livermore.	Lodi.	Mountain View.	Oakville.	Sonoma.	Stockton.
Rupestris × Cordifolia, No. 107-11:											
Year of planting.....	1906	1907	1904	.....	.....	1905	1904	1905	1905	1905	.....
Growth rating.....	71	89	89	.....	.....	84	94	71	89	85	.....
Rupestris × (Cordifolia × Rupestris), No. 202:											
Year of planting.....	1907	1907	1904	.....	.....	.....	.....	1907	1904	1904	1907
Growth rating.....	68	91	90	.....	.....	.....	.....	82	85	87	77
Rupestris × (Cordifolia × Rupestris), No. 202-5:											
Year of planting.....	1906	.....	1904	1906	.....	1906	1907	.....	.....	1906	.....
Growth rating.....	90	.....	90	89	.....	50	78	.....	.....	90	.....
Rupestris × Hybrid Azemar, No. 215:											
Year of planting.....	1907	1907	1904	1905	.....	1904	1904	1905	1904	1904	.....
Growth rating.....	93	85	89	70	.....	74	83	70	91	92	.....
Rupestris × Petit Bouschet, No. 503:											
Year of planting.....	1906	.....	.....	.....	.....	1904	.....	.....	.....	.....	.....
Growth rating.....	95	.....	.....	.....	.....	91	.....	.....	.....	.....	.....
Rupestris × Petit Bouschet Jaeger, No. 504:											
Year of planting.....	1906	.....	.....	1904	.....	1906	.....	.....	1907	1907	.....
Growth rating.....	96	.....	.....	96	.....	90	.....	.....	94	92	.....
Rupestris × Riparia, No. 108-16:											
Year of planting.....	1912	.....	1904	.....	.....	.....	1904	.....	1904	1904	.....
Growth rating.....	75	.....	91	.....	.....	.....	78	.....	68	81	.....
Salt Creek:											
Year of planting.....	1906	1906	1903	1904	.....	1905	1904	1904	1903	1904	.....
Growth rating.....	91	87	86	85	.....	77	92	68	90	84	.....
Solonis Robusta:											
Year of planting.....	1906	1906	1903	1904	1905	1904	1904	1904	1903	1905	1907
Growth rating.....	84	92	92	93	92	83	88	90	92	90	87
Solonis × (Cordifolia × Rupestris), No. 202-4:											
Year of planting.....	1909	1907	1904	.....	.....	1906	1906	.....	1906	.....	.....
Growth rating.....	60	93	84	.....	.....	76	84	.....	61	.....	.....
Solonis × Othello:											
Year of planting.....	1906	1907	.....	1904	.....	1904	1904	.....	.....	1904	.....
Growth rating.....	99	93	.....	96	.....	87	88	88	.....	95	.....
Solonis × Othello, No. 1613:											
Year of planting.....	1906	1906	1903	.....	1905	1906	1907	.....	1903	.....	1907
Growth rating.....	99	96	100	.....	95	90	92	.....	100	.....	94
Solonis × Riparia, No. 1615:											
Year of planting.....	1906	1906	1904	.....	.....	.....	1904	1907	1904	1904	1907
Growth rating.....	93	90	96	.....	.....	.....	91	83	86	89	89
Solonis × Riparia, No. 1616:											
Year of planting.....	1906	1906	1904	1904	1907	1904	1907	1904	1904	1904	1907
Growth rating.....	90	91	94	91	86	80	86	80	98	88	94
Taylor Narbonne:											
Year of planting.....	1906	1907	1904	1904	1907	1904	1904	1904	1904	1904	1907
Growth rating.....	70	82	89	95	78	70	51	71	91	85	86
Texas:											
Year of planting.....	.....	.....	.....	.....	1905	.....	.....	.....	.....	.....	.....
Growth rating.....	.....	.....	.....	.....	79	.....	.....	.....	.....	.....	.....
Tisserand:											
Year of planting.....	1906	.....	1904	.....	.....	.....	1904	.....	1904	.....	.....
Growth rating.....	93	.....	84	.....	.....	.....	78	.....	92	.....	.....
Viala:											
Year of planting.....	1906	1907	1904	.....	.....	1904	.....	.....	1903	1907	1907
Growth rating.....	92	86	89	.....	.....	71	.....	.....	97	82	87
Viala × Riparia:											
Year of planting.....	.....	.....	1904	.....	.....	1904	1904	1905	1904	1905	.....
Growth rating.....	.....	.....	77	.....	.....	70	77	78	69	82	.....
Vitis candicans:											
Year of planting.....	.....	.....	.....	.....	.....	.....	.....	1904	1904	.....	.....
Growth rating.....	.....	.....	.....	.....	.....	.....	.....	65	89	.....	.....

A number of the resistant-stock varieties have been growing a sufficient length of time to show what may be expected of them under similar conditions. In the following list of stocks that are worthy of special mention as having made excellent growth ratings at each of eleven California experiment vineyards, the varieties are given in the order of their ratings, i. e., the best growers first, and so on:

Chico Varietal Vineyard.—Lenoir; Rupestris de Semis, No. 81-2; Rupestris × Berlandieri, No. 301A; Aramon × Rupestris Ganzin, No. 1; Berlandieri × Riparia, No. 157-11; Columbaud × Riparia, No. 2502; Rupestris Metallica; Rupestris Pillans; Solonis × Othello; Solonis × Othello, No. 1613; Aramon × Rupestris Ganzin, No. 9; Rupestris Othello; Berlandieri × Riparia, No. 420A; Dog Ridge; Hotporup; Monticola × Riparia, No. 18808; (Aestivalis × Monticola) × (Riparia × Rupestris, No. 554-5); Barnes.

Colfax Experiment Vineyard.—Rupestris St. George; Mourvedre × Rupestris, No. 1202; Dog Ridge; Solonis × Othello, No. 1613; Berlandieri × Riparia, No. 420A; Riparia × Rupestris, No. 3309; Aramon × Rupestris Ganzin, No. 1; Constantia; Rupestris des Caussettes; Rupestris × Berlandieri, No. 301B; Adobe Giant; Aramon × Rupestris Ganzin, No. 2; Lenoir; Solonis × (Cordifolia × Rupestris), No. 202-4; Solonis × Othello; Monticola × Riparia, No. 18815; Motley; Riparia × Rupestris, No. 101-14.

Fresno Experiment Vineyard.—Mourvedre × Rupestris, No. 1202; Solonis × Othello, No. 1613; Cordifolia × Riparia, No. 125-1; Aramon × Rupestris Ganzin, No. 2; Australis; Riparia France; Constantia; Rupestris des Semis, No. 81-2; Rupestris Pillans; Rupestris St. George; Solonis × Riparia, No. 1615; Aramon × Rupestris Ganzin, No. 9; Monticola × Riparia, No. 18815; Riparia × Rupestris, No. 101; Riparia × Rupestris, No. 3309; Barnes; Monticola × Riparia, No. 18804; Monticola × Riparia No. 18808.

Geyserville Experiment Vineyard.—Mourvedre × Rupestris, No. 1202; Aramon × Rupestris Ganzin, No. 1; Aramon × Rupestris Ganzin, No. 2; Dog Ridge; Riparia × Rupestris, No. 3309; Rupestris St. George; Riparia × Rupestris, No. 101; Riparia × Rupestris, No. 3306; Solonis × Othello; Lenoir; Rupestris Martin; Rupestris Metallica; Taylor Narbonne; Rupestris × Berlandieri, No. 301B; Berlandieri Lafont, No. 9; Solonis Robusta; (Aestivalis × Monticola) × (Riparia × Rupestris, No. 554-5); Australis.

Guasti Experiment Vineyard.—Constantia; Dog Ridge; Lenoir; Barnes; Rupestris Metallica; Rupestris Pillans; Rupestris St. George; Solonis × Othello, No. 1613; Arizonica Phoenix; Mourvedre × Rupestris, No. 1202; Riparia Gloire; Riparia Ramond; Rupestris des Caussettes; Solonis Robusta; Berlandieri × Riparia, No. 420A; Pinot × Rupestris, No. 1305; Riparia × Rupestris, No. 3306; Rupestris le Reux.

Livermore Experiment Vineyard.—Mourvedre × Rupestris, No. 1202; Rupestris St. George; Aramon × Rupestris Ganzin, No. 1; Rupestris des Semis, No. 81-2; Monticola × Riparia, No. 18815; Riparia × (Rupestris × Aramon) Jaeger, No. 201; Dog Ridge; Rupestris Metallica; Rupestris Martin; Rupestris Pillans; Riparia × Rupestris, No. 101; Monticola × Riparia, No. 18804; Monticola × Riparia, No. 18808; Riparia × Rupestris, No. 101-14; Solonis × Othello, No. 1613; Australis; Aramon × Rupestris Ganzin, No. 9; Cordifolia × Rupestris.

Lodi Experiment Vineyard.—Aramon × Rupestris Ganzin, No. 1; Riparia × Rupestris, No. 101-14; Mourvedre × Rupestris, No. 1202; Riparia × Rupestris, No. 101; Lenoir; Motley; Aramon × Rupestris Ganzin, No. 9; Dog Ridge; Riparia × Rupestris,

No. 3309; Rupestris $\times$ Cordifolia, No. 107-11; Berlandieri $\times$ Riparia, No. 420A; Riparia $\times$ (Rupestris $\times$ Aramon) Jaeger, No. 201; Rupestris Metallica; Rupestris Pillans; (Aestivalis $\times$ Monticola) $\times$ (Riparia $\times$ Rupestris, No. 554-5); Ramsey; Rupestris Martin; Salt Creek.

Mountain View Experiment Vineyard.—Dog Ridge; Mourvedre $\times$ Rupestris, No. 1202; Lenoir; Monticola $\times$ Riparia, No. 18804; Aramon $\times$ Rupestris Ganzin, No. 1; Aramon $\times$ Rupestris Ganzin, No. 2; Riparia $\times$ Rupestris, No. 3306; Motley; Solonis Robusta; Berlandieri $\times$ Riparia, No. 420A; Riparia $\times$ Rupestris, No. 3309; Rupestris $\times$ Berlandieri, No. 301A; Solonis $\times$ Othello; Riparia $\times$ Berlandieri, No. 161-49; Rupestris St. George; Rupestris $\times$ Berlandieri, No. 301B; Monticola $\times$ Riparia, No. 18808; Monticola $\times$ Riparia, No. 18815.

Oakville Experiment Vineyard.—Mourvedre $\times$ Rupestris, No. 1202; Rupestris St. George; Solonis $\times$ Othello, No. 1613; Barnes; Constantia; Aramon $\times$ Rupestris Ganzin, No. 1; Aramon $\times$ Rupestris Ganzin, No. 2; Berlandieri $\times$ Riparia, No. 420A; Lenoir; Monticola $\times$ Riparia, No. 554; Ramsey; Solonis $\times$ Riparia, No. 1616; Dog Ridge; Rupestris Metallica; Viala; Rupestris des Semis, No. 81-2; (Aestivalis $\times$ Monticola) $\times$ (Riparia $\times$ Rupestris, No. 554-5); (Aestivalis $\times$ Rupestris) $\times$ Riparia, No. 227.

Sonoma Experiment Vineyard.—Dog Ridge; Lenoir; Monticola $\times$ Riparia, No. 18815; Solonis $\times$ Othello; Aramon $\times$ Rupestris Ganzin, No. 9; Monticola $\times$ Riparia, No. 18808; Riparia $\times$ Rupestris, No. 3306; Aramon $\times$ Rupestris Ganzin, No. 2; Australis; Berlandieri $\times$ Riparia, No. 420A; Mourvedre $\times$ Rupestris, No. 1202; Monticola $\times$ Riparia, No. 18804; Riparia $\times$ Rupestris, No. 3309; Riparia $\times$ Rupestris, No. 108-103; Adobe Giant; Aramon $\times$ Rupestris Ganzin, No. 1; Riparia $\times$ (Cordifolia $\times$ Rupestris), No. 106-8; Riparia $\times$ Rupestris, No. 101-14.

Stockton Experiment Vineyard.—Rupestris St. George; Constantia; Aramon $\times$ Rupestris Ganzin, No. 9; Mourvedre $\times$ Rupestris, No. 1202; Riparia $\times$ Rupestris, No. 101-14; Solonis $\times$ Othello, No. 1613; Solonis $\times$ Riparia, No. 1616; Monticola $\times$ Riparia, No. 18808; Columbaud $\times$ Riparia, No. 2502; Monticola $\times$ Riparia, No. 18815; Rupestris $\times$ Cinerea; Barnes; Riparia $\times$ (Cordifolia $\times$ Rupestris), No. 106-8; Riparia $\times$ Rupestris, No. 101; Lenoir; Riparia $\times$ Rupestris, No. 3306; Rupestris des Causettes; Rupestris $\times$ Berlandieri, No. 219A.

Table V gives the resistant varieties in each vineyard which are estimated to have made the best and most creditable growth records as compared to all the varieties under test. The numbers in line with each name in the vineyard columns show the relative growth rating made by the variety in the respective vineyards where it is under test. The highest rating is expressed by the figure 1, the next by 2, and so on. The ratings therefore represent the behavior of each variety under the conditions existing at the several vineyards, expressed in terms that permit comparison with its behavior elsewhere, and in comparison also with other varieties in the same vineyard. To illustrate: Of all the resistant varieties at Livermore the best record was made by Mourvedre $\times$ Rupestris, No. 1202 (rated as 1), whereas at Stockton it was fourth best (expressed by 4), and at Sonoma eleventh best (expressed by 11).

TABLE V.—*Resistant-stock varieties of grapes making the best growth records, showing their relative merits in each of eleven experiment vineyards in California.*

Variety.	Chico.	Colfax.	Fresno.	Geyserville.	Guasti.	Livermore.	Lodi.	Mountain View.	Oakville.	Sonoma.	Stockton.
Adobe Giant.....		11								15	...
Aramon × Rupestris Ganzin:											
No. 1.....	4	7		2		3	1	5	6	16	...
No. 2.....		12	4	3				6	7	8	...
No. 9.....	11		12			17	7			5	3
Australis.....			5	18		16				9	
Barnes.....	18		16		4				4		12
Berlandieri × Riparia:											
No. 429 A.....	13	5			15		11	1	8	10	...
No. 157-11.....		5									
Columbaud × Riparia, No. 2502.....		6									9
Constantia.....		8			1				5		2
Cordifolia × Riparia, No. 125-1.....			3								
Dog Ridge.....	14	3		4	2	7	5	1	13	1	
Lenoir.....	1	13		10	3		5	3	9	2	15
Monticola × Riparia:											
No. 18804.....			17			12		4		12	...
No. 18808.....	16		18			13		17		6	8
No. 18815.....		16	13			5		18		3	10
Motley.....		17					6				
Mourvedre × Rupestris, No. 1202.....		2	1	1	10	1	3	2	1	11	4
Ramsay.....							16		11		
Riparia Gloire.....					11						
Riparia × Rupestris:											
No. 101.....			14	7		11	4				14
No. 101-14.....		18				14	2			18	5
No. 3306.....			8	17				7		7	16
No. 3309.....		6	15	5			9	11		13	
Rupestris des Semis, No. 81-2.....	2		8			4			16		
Rupestris Martin.....				11		9	17				
Rupestris Metallica.....	7			12	5	8	13		14		
Rupestris Pillans.....	8		9		6	10	14				
Rupestris St. George.....		1	10	6	7	2		15	2		1
Rupestris × Berlandieri:											
No. 301 A.....	3							12			
No. 301 B.....		10		14				16			
Rupestris Cinerea.....											11
Rupestris × Cordifolia, No. 107-11.....							10				
Solomis Robusta.....				16	14			9			
Solomis × Othello.....	9	15		9				13		4	
Solomis × Othello, No. 1613.....	10	4	2		8	15			3		6

Table VI gives an alphabetical list of improved American native and Franco-American grape varieties which are being tested on their own roots in the Chico, Colfax, Fresno, Geyserville, Guasti, Livermore, Lodi, Mountain View, Oakville, Sonoma, and Stockton experiment vineyards. The plantings are too young to permit the drawing of conclusions.

TABLE VI.—*Varieties of American native and Franco-American grapes under test on their own roots at eleven experiment vineyards in California.*

[The locations of the tests are indicated by plus (+) marks.]

Varieties.	Chico.	Colfax.	Fresno.	Geyserville.	Guasti.	Livermore.	Lodi.	Mountain View.	Oakville.	Sonoma.	Stockton.
Agawam.....	+	+									
Albania.....			+								
Alexander Winter.....	+								+		
Alicante Ganzin.....	+	+				+					
Alicante × Rupestris Terrace, No. 20.....	+			+		+					+
Alice.....	+								+		
Amber Queen.....	+										
Ambrosia.....	+										
Amerbonte.....								+			

TABLE VI.—Varieties of American native and Franco-American grapes under test on their own roots at eleven experiment vineyards in California—Continued.

Varieties.	Chico.	Collax.	Fresno.	Geyserville.	Gust.	Livermore.	Lodi.	Mountain View.	Oakville.	Sonoma.	Stockton.
America.....	+		+	+		+		+	+	+	
Aminia.....	+				+						
Antoinette.....	+										
Arkansas.....	+								+		
Aroma.....	+										
Atoka.....								+			
August Giant.....	+										
Bacchus.....	+								+		
Bailey.....	+										
Barry.....	+			+		+	+	+		+	
Belle.....	+										
Berekinans.....		+		+			+	+	+		
Bertha.....	+										
Big Extra.....	+										+
Big Hope.....	+										
Bourisquon × Rupestris:											
No. 601.....	+									+	+
No. 109-4.....	+			+							+
No. 3907.....	+					+					
No. 4306.....	+			+				+		+	+
No. 4308.....	+					+					+
Brighton.....	+	+	+		+						
Brilliant.....	+					+					
Campbell.....	+								+		
Canada.....	+	+				+					+
Carignane × Rupestris:											
No. 404.....	+										+
No. 501.....	+					+					+
Castel:											
No. 1028.....	+										
No. 19002.....	+										
Catawba.....	+					+					
Cayuga.....	+										
Centennial.....	+	+									
Chambrill.....	+								+		
Champanel.....	+										+
Champion.....	+										
Chasselas × Rupestris, No. 901.....	+							+			+
Clairette Doré Ganzin.....				+		+		+		+	+
Clevener.....		+									
Clinton.....	+										
Cloeta.....			+					+			
Cochee.....	+								+		
Colerain.....	+										
Collier.....	+										
Columbaud × Rupestris.....						+				+	
Concord.....	+			+			+	+			
Continental.....									+		
Cornucopia.....	+	+					+		+		
Cottage.....	+										
Coudere:											
No. 101.....	+						+				+
No. 201.....	+										+
No. 503.....	+						+				+
No. 704.....											+
No. 1173.....									+		
No. 3701.....	+		+		+						+
No. 28 × 112.....	+				+						+
No. 43-06.....									+		
No. 82 × 32.....	+						+				
No. 84 × 61.....	+										
No. 87 × 115.....	+										+
No. 124 × 30.....	+						+				
No. 132-11.....	+										
Cunningham.....											
Cynthia.....					+				+		
Delaware.....	+			+	+	+		+	+	+	
Diamond.....	+										
Duchess.....	+			+		+		+			
Early Victor.....	+				+				+		
Elvira.....		+									
Fern Munson.....	+										
Governor Ross.....	+							+			
Herbmont.....	+		+								
Herbert.....	+										
Hexamer.....	+										
Husmann.....	+				+						
Isabella.....	+										
Jaeger.....						+					
Lampasas.....	+							+		+	

TABLE VI.—*Varieties of American native and Franco-American grapes under test on their own roots at eleven experiment vineyards in California—Continued.*

Varieties.	Chico.	Colfax.	Fresno.	Geyser- ville.	Guasti.	Liver- more.	Lodi.	Mountain View.	Oakville.	Sonoma.	Stockton.
Lenoir.....	+										+
Lindley.....	+							+			
Linn.....	+										
Lindmar.....	+								+		
Little Blue.....	+										
Livingston.....	+										
Long John.....	+										
Louisiana.....	+	+	+								
Lucile.....	+										
Lukfata.....	+										
Manito.....	+		+					+		+	
Marguerite.....	+	+	+		+			+			
Martha.....	+										
Mary Favorite.....	+										
Massasoit.....	+										
Maxatawney.....	+										
Mericadel.....	+		+					+	+		
Merrimac.....	+										
Missouri Riesling.....	+										
Montefiore.....	+										
Moore.....	+	+	+	+		+	+	+	+	+	
Moyer.....	+										
Mrs. Munson.....	+				+						
Muench.....	+	+									
Niagara.....	+			+		+	+	+		+	
Noah.....	+										
Oliatattoo.....	+	+									
Osage.....	+										
Olita.....	+										
Paradox.....	+										
Paragon.....	+										
Pardes.....	+			+			+				+
Peabody.....	+										
Pearl.....	+								+		
Perkins.....	+										
Pierce.....	+		+	+		+		+	+	+	
Plant de Carmes.....	+		+					+	+		
Plant de Gounay.....	+							+	+		
Pocklington.....	+										
Fresley.....	+								+		
Ragan.....	+	+			+						
Rebecca.....	+			+			+				
Red Eagle.....	+										
Regal.....	+										
Requa.....	+										
Rockford.....	+										
Rogers:											
No. 5.....	+										
No. 13.....	+										
No. 32.....	+								+		
Rommel.....	+								+		+
Siebel No. 14.....	+			+							
Shalah.....	+						+				
Wyoming Red.....	+										

To grow vines on resistant stocks successfully, it should be borne in mind that the resistance of vines depends upon the inherent characters of the vine and its adaptation to soil, climatic, and other conditions, and that the resistant quality of the stock is very materially affected by the congeniality of the varieties grafted on it.

CONGENIALITY AND ADAPTABILITY OF VINES.

Two vine varieties are congenial to each other if both top and root flourish when one is grafted on the other. (See Pl. X, fig. 1.) The congeniality would be called perfect when one variety grafted on another behaves as if the stock were grafted with a scion of itself, the union being perfect and the behavior of the vine the same as that of an entire ungrafted plant.

The term "congeniality" as used in this discussion is limited to the relation of vine varieties to the resistant stocks upon which they are grafted. To discriminate properly between adaptability and congeniality and then to determine the congeniality, it is necessary to know the behavior of the resistant varieties as well as the Vinifera varieties on their own roots. If we have grafted vines of which both the stock and the scion varieties are known to be suited to the soil and climatic conditions and they do not respond, we know that congeniality is lacking.

The adaptability of varieties can be closely forecasted, but their congeniality must be determined by actual tests. Without knowledge of its adaptability to existing conditions, the extent to which differences in the behavior of a variety grafted on different stocks are due to congeniality or to adaptability is impossible of determination.

Saccharine and acid determinations of the fruit from grafted vines have been made for a number of years with a view to ascertain whether the quality of the fruit is influenced by the stock upon which the vine is grafted. (See Pl. X.) Such determinations contrasted with the same season's growth ratings of the same vines indicate a close correspondence between these important chemical constituents of the fruit and the congeniality of grafts and stocks as determined by observations, and they afford a useful check on the congeniality ratings.

Similar growth ratings of a variety grafted on various stocks are found to be accompanied by fairly definite percentages of sugar and acid. Under like conditions of growth the sweetness and the acidity of the fruit, as well as its time of ripening, are materially influenced by the congeniality of the scion and stock. The saccharine and acid contents are two of the leading considerations in the money value of the fruit.

In determining the relative congeniality of vine varieties on diverse resistant stocks, these and the relative quantity of fruit produced, the difference in time of ripening, the relative healthfulness and comparative durability of varieties on different resistant stocks, and the relative amount of wood produced are some of the considerations that appear most important.

BEHAVIOR OF GRAPES GRAFTED AND ON THEIR OWN ROOTS.

In Table VII, column 1 gives (1) the variety name, and indented under it (2) the name of the resistant stock on which it is grafted, or if the variety is on its own roots the fact is so stated. Column 2 shows the experiment vineyard in which the growth was tested, use being made of the following abbreviations: C for Chico, Cx for Colfax, F for Fresno, G for Geyserville, Gi for Guasti, L for Lodi, Li for Livermore, M for Mountain View, O for Oakville, S for Sonoma, St for Stockton. Column 3 shows the year in which the stock was

planted, thereby indicating its age, and column 4 gives the year of grafting. Column 5 shows the congeniality, or the growth of each variety on the different stocks, expressed in the form of a percentage rating, on a scale in which the growth of the variety when not grafted but growing as an entire plant on its own root under conditions to which it is well adapted is taken as the standard of excellence, that is, 100 per cent. These ratings therefore represent the behavior of each variety grafted on the several stocks under the conditions existing at the vineyard at which it was found, expressed in terms that permit comparison with its behavior when growing as an entire plant on its own roots under favorable conditions and not based on a comparison with other *Vinifera* varieties grafted on the same stock in the same vineyard. The rating in each case is the average rating made in different seasons to and including the autumn of 1913. To illustrate: Alicante Bouschet, grafted in the Oakville vineyard in 1906 on different resistant stocks, on Aramon $\times$ Rupestris Ganzin, No. 1, was rated at 91; on Riparia $\times$ Rupestris, No. 3309, at 88; on Mourvedre $\times$ Rupestris, No. 1202, at 72; and on Riparia $\times$ Rupestris, No. 101, at 55. This shows that Alicante Bouschet, which is well adapted to the conditions there, when grafted on these different stocks at the same time, under the same conditions, in the same vineyard, and with the same treatment, varied in growth and behavior in comparison with the same variety on its own roots in accordance with the above ratings. Column 6 gives the pruning method, s being used for spurs and c for canes. Column 7 gives the weight of prunings per vine; 8, the nodes bearing fruit; 9 and 10, the growth-starting dates in early and late seasons; 11 and 12, the blossoming dates in early and late seasons; 13 and 14, the fruit-setting dates in early and late seasons; 15 and 16, the fruit-ripening dates in early and late seasons. Columns 17 to 21 give the fruit per vine for the seasons from 1909 to 1913, inclusive; 22, the average percentage of sugar, Balling scale; 23, the average acid, as tartaric, per 100 c. c. Column 24 shows the size of the clusters, m indicating medium; m-l, medium to large; l, large; v, very; s, small. Column 25 shows the shape of the clusters, whether round (r), cylindrical (cy), long (l), or tapering (t). Column 26 designates the density of the clusters, whether compact (c), medium (m), or loose (l). Column 27 shows the size of the berry, whether large (l), medium (m), or small (s). Column 28 gives the shape of the berry, whether round (r), oval (o), or oblong (ob). Column 29 shows the color of the berry, whether black (b), red (r), or white (w). Column 30 indicates the purpose for which the fruit is used, whether for table (t), shipping (s), juice (j), wine (w), or storage (st). In this table the nomenclature of varieties has been brought into conformity with the code of the American Pomological Society in so far as it has appeared practicable.

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
1		3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ach-I-Soum: Dog Ridge. Lenor.	O	1904	1910 1910	P. cl. 92	c, s	Lbs. 6.5		Mar. 24		May 30 May 31	June 1	June 3 June 6	June 20	Sept. 26 Oct. 17	Oct. 7
Actoni Macron: Lenor.	O	1904 1907	1907 1907	80 91	s s	2.9	3 to 4 2 to 5	Mar. 24		May 20	June 5	May 24	June 24		
Monicola X Rupestris. Mourvedre X Rupestris, No. 1202.	F	1907 1907	1907 1907	92 92	c, s c, s	5.5 3	2 to 5 2 to 5	Mar. 21 Mar. 14	Apr. 1	May 20 May 15	May 25 May 24	May 24 do.		Sept. 15	
Solons X Riparia, No. 1616.	F	1907	1907	90	c, s										
Actonky: Lenor.	O	1904	1907	89	s	3.3	2 to 5	Mar. 24		May 23	June 12	May 29	June 29	Sept. 25	Oct. 6
Monicola X Rupestris. Molley.	F	1907 1907	1907 1907	89 87	c, s c, s	3.7 3	4 to 5 3 to 5	Mar. 21 Mar. 23	Apr. 1 Mar. 28	May 19 May 18	May 23 do.	May 31 May 30	June 1	Sept. 21	
Admirable: Riparia X Rupestris, No. 3309.	O	1904		91	c, s	6.5	2 to 4	Mar. 22		May 15	June 2	May 21	June 19	Sept. 23	Oct. 8
Afenthaler: Own roots.	Gl	1904		83	s			Mar. 14	Mar. 20	May 26	May 27	June 4		Sept. 15	Sept. 24
Agadia: Riparia X Rupestris, No. 3309.	O		1910	96	c, s	2				May 25	June 1	June 6	June 16		
Ahmeur bon Ahmeur: Lenor.	O	1904	1907	88	s	2.8	3 to 6	Mar. 24		May 20	June 7	May 25	June 19	Sept. 30	Oct. 7
Ajaki Odia: Mourvedre X Rupestris, No. 1202.	F	1907	1907	97	c, s	4.5	4 to 6	do.	Apr. 3	May 18	May 23	May 29		Sept. 3	Oct. 17
Riparia X Rupestris, No. 101.	F	1907	1907	88	c, s		3 to 5	Mar. 20	Mar. 30	May 17	May 21	May 27		Sept. 6	Sept. 21
Rupestris Metallica.	F	1907	1907	85	s	3	3 to 4	do.	Apr. 2	May 15	May 23	May 24			
Ajmi: Lenor.	O	1906	1909	88	s	1.5		Mar. 27		June 8	June 13	June 17	June 20		
Aleatico: Own roots.	Gl	1904		90	s			Mar. 14	Mar. 25	May 29	May 30	June 2	June 5	Sept. 3	Sept. 23
Dog Ridge.	O	1904	1906	91	c, s	3.5	2 to 5	Mar. 20		May 23	June 1	May 28	June 17	Sept. 24	Oct. 6
Lenor.	O	1903	1905	88	s	3.8	2 to 4	Mar. 16		May 21	June 3	May 26	June 19	Sept. 5	Oct. 5
Rupestris St. George.	O	1903	1905	93	c, s	3	2 to 4	Mar. 18		May 26	do.	June 1	June 17	Sept. 22	Oct. 2
Taylor Narbonne	O	1904	1906	81	s	3.2	2 to 5	Mar. 17		May 25	June 8	May 30	June 15	Oct. 4	

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California.—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year stock was planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Alexandria:															
Own roots.						<i>Lbs.</i>									
Adobe Giant.	G	1904	1906	78	s	1.3	2 10 6	Mar. 26	Apr. 1	May 23	do.	June 2	do.	Sept. 16	Sept. 24
Aramon × Rupestris Ganzin, No. 1.	F	1904	1906	86	s	1.5	3 10 5	Mar. 14	do.	May 14	May 26	May 25	June 2	Sept. 4	Sept. 20
Aramon × Rupestris Ganzin, No. 2.	F	1907	1909	87	s	2.5		Apr. 1	do.	May 15	May 24	May 24	June 1	Sept. 12	Sept. 22
Australis.	F	1907	1909	88	s	3		do.		May 22				Sept. 15	Sept. 27
Berlandieri × Riparia, No. 420 A.	F	1907	1909	89	s	2		Mar. 24		do.				Oct. 16	Oct. 16
Constantia.	F	1907	1909	87	s	2.5		Mar. 23		May 25				Sept. 15	Oct. 16
Log Ridge.	F	1904	1906	90	s	2.3	2 10 5	Mar. 14	Apr. 6	May 21	May 29	May 28	June 11	Sept. 8	Sept. 20
Abercromb.	F	1903	1905	82	s	1.3	3 10 5	do.	Apr. 1	May 12	May 30	do.	June 5	do.	Do.
Lenoir.	F	1903	1905	85	s	1.5	2 10 5	Mar. 18	do.	May 11	May 29	May 24	June 8	Sept. 9	Sept. 15
Monticola × Riparia, No. 18808.	F	1907	1909	86	s	3		Mar. 29		May 20				Oct. 16	
Monticola × Rupestris.	F	1907	1909	88	s	3.6		Mar. 27		May 25				do.	
Mourvedre × Rupestris, No. 1202.	F	1904	1906	86	s	2.5	3 10 5	Mar. 13	Apr. 3	May 14	June 1	May 24	June 10	Sept. 4	Sept. 20
Riparia Gloire.	F	1903	1905	83	s	4	3 10 6	Mar. 14	Apr. 1	May 13	May 30	May 25	June 9	Sept. 9	Do.
Riparia × (Cordifolia × Rupestris, No. 106-S).	F	1907	1909	87	s	5.5		Mar. 24		May 20				Oct. 16	
Riparia × Rupestris, No. 101.	F	1904	1906	90	s	2	2 10 5	Mar. 12	Apr. 5	do.	May 31	May 28	June 7	Sept. 5	Sept. 20
Riparia × Rupestris, No. 101-11.	F	1907	1909	89	s	3.5		Mar. 25		May 26				Oct. 16	
Riparia × Rupestris, No. 336.	F	1907	1909	91	s	2.5		Mar. 31		May 28				do.	
Riparia × Rupestris, No. 339.	F	1904	1906	87	s	4	1 10 5	Mar. 13	Apr. 5	May 18	May 29	May 28	June 5	Sept. 5	Sept. 20
Rupestris Martin.	F	1903	1905	85	s	1.6		Mar. 8	Apr. 1	May 13	May 31	May 27	do.	Sept. 8	Do.
Rupestris St. George.	F	1903	1905	89	s	2	2 10 5	Mar. 14	do.	May 15	May 28	May 26	do.	do.	Do.
Rupestris × Berlandieri, No. 219 A.	F	1907	1908	87	s	3		Apr. 1		May 16				do.	
Salt Creek.	F	1903	1905	86	s	1.6	3 10 6	Apr. 7	Apr. 1	May 22	May 29	May 21	June 3	Sept. 10	Sept. 20
Solonis Robusta.	F	1907	1909	84	s	1		Mar. 29	May 22					Oct. 16	
Solonis × Othello, No. 1613.	F	1907	1909	86	s	3		Mar. 8		May 25				do.	
Solonis × Riparia, No. 1616.	F	1903	1906	85	s	2.4	2 10 5	Mar. 14	Apr. 5	May 13	May 30	May 27	June 4	Sept. 4	Sept. 20
Taylor Narbonne.	F	1904	1906	85	s	1.8	3 10 5	Mar. 13	Apr. 1	May 22	May 29	do.	June 8	Sept. 15	Do.
Viala.	F	1907	1911	89	s	1		Mar. 25		May 20					

Alicante:	Gi	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012	3013	3014	3015	3016	3017	3018	3019	3020	3021	3022	3023	3024	3025	3026	3027	3028	3029	3030	3031	3032	3033	3034	3035	3036	3037	3038	3039	3040	3041	3042	3043	3044	3045	3046	3047	3048	3049	3050	3051	3052	3053	3054	3055	3056	3057	3058	3059	3060	3061	3062	3063	3064	3065	3066	3067	3068	3069	3070	3071	3072	3073	3074	3075	3076	3077	3078	3079	3080	3081	3082	3083	3084	3085	3086	3087	3088	3089	3090	3091	3092	3093	3094	3095	3096	3097	3098	3099	3100	3101	3102	3103	3104	3105	3106	3107	3108	3109	3110	3111	3112	3113	3114	3115	3116	3117	3118	3119	3120	3121	3122	3123	3124	3125	3126	3127	3128	3129	3130	3131	3132	3133	3134	3135	3136	3137	3138	3139	3140	3141	3142	3143	3144	3145	3146	3147	3148	3149	3150	3151	3152	3153	3154	3155	3156	3157	3158	3159	3160	3161	3162	3163	3164	3165	3166	3167	3168	3169	3170	3171	3172	3173	3174	3175	3176	3177	3178	3179	3180	3181	3182	3183	3184	3185	3186	3187	3188	3189	3190	3191	3192	3193	3194	3195	3196	3197	3198	3199	3200	3201	3202	3203	3204	3205	3206	3207	3208	3209	3210	3211	3212	3213	3214	3215	3216	3217	3218	3219	3220	3221	3222	3223	3224	3225	3226	3227	3228	3229	3230	3231	3232	3233	3234	3235	3236	3237	3238	3239	3240	3241	3242	3243	3244	3245	3246	3247	3248	3249	3250	3251	3252	3253	3254	3255	3256	3257	3258	3259	3260	3261	3262	3263	3264	3265	3266	3267	3268	3269	3270	3271	3272	3273	3274	3275	3276	3277	3278
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TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year stock was planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
1		3	4	5	6	7	8	9	10	11	12	13	14	15	16
Aramon:				<i>P. cl.</i>		<i>Lbs.</i>									
Aramon × Rupestris Ganzin, No. 1.	O	1904	1906	91	s	3 to 5	3 to 5	Mar. 19	Mar. 25	May 22	June 3	May 28	June 17	Sept. 28	Oct. 20
Australis.....	F	1907	1907	90	c, s	1 to 5	2 to 5	Mar. 14	Mar. 25	May 21	May 21	May 27	June 17	Sept. 17	Sept. 21
Barnes.....	F	1907	1907	87	c, s	1 to 9	2 to 5	Mar. 18	Mar. 28	May 14	May 22	May 27	June 27	Sept. 10	Sept. 21
Carnucopia.....	F	1907	1907	81	c, s	2 to 6	3 to 6	Mar. 12	Mar. 26	May 10	May 21	May 23	June 24	do.	Oct. 17
De Graisset.....	F	1907	1907	91	c, s	2 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Dog Ridge.....	O	1903	1905	92	s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Herbemont.....	F	1906	1906	89	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Isopurpur.....	F	1907	1907	83	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Lenoir.....	F	1903	1905	93	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Monticola × Rupestris.....	F	1907	1907	93	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Nouveau × Rupestris, No. 1202.....	F	1904	1906	90	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Pomroy.....	F	1907	1907	87	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Ramsey × Rupestris, No. 101.....	F	1907	1907	82	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Do.....	F	1907	1907	87	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Riparia × Rupestris, No. 3309.....	O	1904	1906	87	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Riparia × Rupestris de Jaeger.....	F	1907	1907	83	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Rupestris des Ausseilles.....	F	1907	1907	83	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Rupestris des Semis, No. 81-2.....	F	1907	1907	88	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Rupestris Martin.....	F	1903	1905	87	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Do.....	F	1907	1907	87	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Rupestris St. George.....	O	1903	1905	92	s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Rupestris × Berlandieri, No. 219 A.....	F	1907	1907	87	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Sal Creek.....	F	1903	1905	91	s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Do.....	F	1907	1907	87	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Solonis × Othello.....	F	1907	1907	85	s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Solonis × Riparia.....	F	1907	1907	86	s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Do.....	O	1904	1906	85	s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Taylor Narbonne.....	O	1904	1906	89	s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Do.....	F	1907	1907	84	s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Valencia.....	F	1907	1907	91	s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Vermorel.....	F	1907	1907	89	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25
Viala.....	F	1907	1907	90	c, s	3 to 6	3 to 6	Mar. 18	Mar. 26	May 22	June 3	May 28	June 17	Sept. 20	Oct. 25

Askari:	Gi	1904	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903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TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—(Continued).

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
Bastardo:															
Own roots.....	C1	1904					8	9	10	11	12	13	14	15	16
Dog Ridge.....		1904			C, S	Lbs.	3 to 4	Mar. 15	Mar. 20	May 26	June 3	May 31	June 10	Aug. 26	Sept. 20
Lenoir.....	O	1904	1906	86	C, S	4.5	2 to 3	Mar. 17	Mar. 25	May 27	June 5	June 3	June 20	Sept. 23	Oct. 2
Rupestris St. George.....	O	1903	1905	90	C, S	5.3	2 to 4	Mar. 15	Mar. 19	May 19	May 21	May 24	June 19	Sept. 20	Oct. 24
Taylor Narbonne.....	O	1903	1905	93	S	4.5	2 to 3	Mar. 23	Mar. 23	May 22	June 1	May 28	June 15	Sept. 25	Oct. 10
Beclan:															
Own roots.....	C1	1904			S	4.8	2 to 3	Mar. 19	Mar. 19	May 28	June 1	June 4	do.	do.	Oct. 8
Dog Ridge.....		1904			S	3.6	2 to 4	Mar. 17	Mar. 30	May 24	June 30	May 29	June 7	Sept. 16	Sept. 25
Lenoir.....	O	1904	1906	90	S	2.8	2 to 4	Mar. 19	Mar. 19	May 22	June 1	May 27	June 22	do.	Oct. 15
Rupestris St. George.....	O	1903	1905	88	S	2.6	2 to 5	Mar. 16	Mar. 16	May 23	June 1	do.	June 16	Sept. 26	Oct. 10
Taylor Narbonne.....	O	1904	1906	88	S	1.3	2 to 5	Mar. 18	Mar. 18	May 23	June 1	May 28	June 11	Sept. 29	Do.
Belino:															
Own roots.....	C1	1904			S	1.2	3 to 5	Mar. 13	Apr. 1	May 27	May 20	May 20	May 31	Aug. 25	Sept. 21
Adobe Giant.....	F	1904	1906	88	S	4.5	3 to 6	Mar. 17	Mar. 28	May 15	June 15	May 24	June 1	do.	Sept. 20
Aramon X Rupestris Ganzin, No. 1.....	F	1904	1906	93	C, S	5.1	3 to 5	Mar. 14	Apr. 2	May 15	June 15	May 25	June 13	Aug. 24	Do.
Dog Ridge.....	F	1904	1906	90	S	3.3	3 to 4	Mar. 24	Mar. 24	May 12	June 8	May 29	June 24	Sept. 26	Oct. 8
Do.....	F	1904	1906	87	S	1.3	3 to 6	Mar. 7	Mar. 30	May 12	June 16	May 21	June 13	Aug. 25	Sept. 13
Lenoir.....	F	1903	1905	88	S	4.2	3 to 6	Mar. 18	Mar. 18	May 26	June 1	June 2	June 1	Sept. 25	Sept. 20
Do.....	F	1903	1905	92	S	4.2	3 to 6	Mar. 6	Apr. 1	May 20	May 26	May 24	June 1	Oct. 17	Sept. 10
Mourvedre X Rupestris, No. 1202.....	F	1904	1906	88	C, S	3.1	3 to 5	Mar. 15	Mar. 15	May 12	May 22	May 25	May 28	Aug. 25	Sept. 20
Pontroy.....	F	1904	1906	93	C, S	3	3 to 6	Mar. 7	Mar. 28	May 12	May 20	May 24	May 27	do.	Sept. 10
Riparia X Rupestris, No. 101.....	F	1907	1907	93	S	4	3 to 6	Mar. 20	Apr. 1	May 8	May 22	May 24	May 27	do.	Sept. 20
Riparia X Rupestris, No. 389.....	F	1904	1906	92	C, S	2.7	2 to 5	Mar. 12	Mar. 28	May 10	June 20	May 22	June 13	Aug. 25	Sept. 19
Rupestris des Causettes.....	F	1904	1906	93	S	3.4	3 to 5	Mar. 14	Mar. 14	May 12	June 1	May 25	June 27	Aug. 25	Sept. 30
Rupestris St. George.....	F	1907	1907	89	S	1.8	2 to 5	Mar. 7	Mar. 25	May 16	May 25	May 25	May 50	do.	Sept. 20
Do.....	F	1903	1905	87	S	3.7	3 to 5	Mar. 18	Mar. 18	May 13	May 20	May 22	May 22	do.	Oct. 8
Solonis X Riparia, No. 1616.....	O	1904	1906	87	C, S	3	2 to 3	Mar. 22	Mar. 22	May 21	June 1	May 26	June 14	Sept. 21	Oct. 8
Taylor Narbonne.....	F	1904	1906	90	S	3.3	2 to 3	Mar. 22	Mar. 22	May 21	June 1	May 26	June 14	Sept. 21	Oct. 8
Do.....	F	1904	1906	90	S	3.5	2 to 3	Mar. 20	Mar. 20	May 23	June 1	May 26	June 14	Sept. 21	Oct. 8
Vernorel.....	F	1907	1907	80	S	3.5	2 to 3	Mar. 20	Mar. 20	May 23	June 1	May 26	June 14	Sept. 21	Oct. 8

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year planted was	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
1		3	4	5	6	7	8	9	10	11	12	13	14	15	16
Blanc d'Ambre:				<i>P. cl.</i>		<i>Lbs.</i>									
Lenoir.....	O	1904	1907	86	s	2.7	3 to 5	Mar. 17	Mar. 25	May 18	May 31	May 23	June 14	Sept. 25	Sept. 25
Monticola X Rupestris.	F	1907	1907	86	s	1.8	3 to 5	Mar. 15	Mar. 25	May 14	May 22	May 24	June 13	Sept. 23	Oct. 8
Mourvèdre X Rupestris, No. 1202.	F	1907	1907	83	s	3.5	4 to 5	Mar. 14	do.	May 13	May 22	May 25	June 4	Sept. 10	Oct. 2
Salt Creek.	F	1907	1907	92	s	5		Mar. 24	Apr. 1	May 12	May 22	May 23	June 15	Sept. 15	Oct. 4
Blauer Portugieser:															
Ovn roots.	Gi	1904			s			Mar. 17	Mar. 29	May 24	May 28	May 30	June 7	Aug. 28	Sept. 20
Dog Ridge.	O	1904	1906	92	s	5.2	3 to 4	Mar. 18	Mar. 29	May 25	June 1	do.	June 13	Sept. 23	Oct. 8
Lenoir.	O	1903	1905	92	s	4	3 to 5	do.	do.	May 19	May 31	May 25	June 15	Sept. 10	Oct. 4
Rupestris St. George.	O	1903	1905	89	s	2.7	2 to 4	Mar. 19	Mar. 26	May 25	June 3	May 30	June 15	Sept. 15	Oct. 4
Boal de Madere:															
Ovn roots.	Gi	1904			s			do.	Mar. 26	May 24	June 1	May 29	June 7	Aug. 27	Sept. 23
Dog Ridge.	O	1904	1907	89	s	3	2 to 4	Mar. 22	Mar. 29	May 26	June 1	May 30	June 15	Sept. 28	Oct. 6
Lenoir.	O	1903	1905	95	s	4.9	3 to 4	Mar. 19	Mar. 29	May 25	June 1	May 29	June 15	Sept. 15	Oct. 6
Rupestris St. George.	O	1903	1905	95	c, s	5.1	2 to 4	do.	Mar. 20	May 21	June 30	May 26	June 15	Sept. 24	Oct. 6
Taylor Narbonne.	O	1904	1906	92	s	4.1	2 to 4	Mar. 20	Mar. 28	May 25	June 1	May 30	June 15	Sept. 25	Oct. 10
Boghtel:															
Ovn roots.	Gi				s			Mar. 14	Mar. 28	May 26	May 30	May 31	June 1	do.	do.
Bolyuno:															
Ovn roots.	Gi	1904			s			do.	Apr. 1	May 20	June 5	May 30	June 13	Sept. 18	Sept. 24
Dog Ridge.	O	1906	1906	88	c, s	3.9	2 to 6	do.	Apr. 1	May 20	June 5	May 30	June 13	Sept. 26	Oct. 1
Lenoir.	O	1903	1905	91	s	3.4	3 to 5	Mar. 20	Mar. 27	May 25	June 3	May 27	June 17	Sept. 20	Oct. 8
Rupestris St. George.	O	1903	1905	90	s	4.3	2 to 4	Mar. 19	Mar. 27	May 22	June 8	May 27	June 20	Sept. 24	Oct. 8
Taylor Narbonne.	O	1904	1906	88	c, s	4.6	2 to 4	Mar. 20	Mar. 28	May 23	June 5	May 28	June 15	Sept. 25	Do.
Bouarda:															
Ovn roots.	Gi	1904			s			Mar. 11	Apr. 2	June 3	do.	June 9	do.	Sept. 5	Sept. 23
Boudales:															
Ovn roots.	Gi	1907			s			Mar. 28	Apr. 1	May 27	June 6	May 30	June 17	Sept. 20	Oct. 15
Lenoir.	O	1903	1905	83	s	3.8		Mar. 20	Apr. 1	May 24	June 5	June 2	do.	Sept. 27	Oct. 8
Rupestris St. George.	O	1903	1905	93	s	4.3	2 to 4	Mar. 22	do.	May 23	June 6	June 2	do.	do.	do.
Bowood Muscat.															
Ovn roots.	Gi	1904			s			Mar. 25	Apr. 5	June 5	June 6	June 14	do.	Sept. 19	Sept. 24

Brustlano: Adobe Giant. Lenoir. Monticola × Rupestris. F O F Buckley: Mourvredre × Rupestris, No. 1202. O Lenoir. Rupestris St. George. F Buckland: Rupestris St. George. O Own roots. Lenoir. Burger: Own roots. Gi O

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—(Continued).

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year stock was planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
Calabrian:															
Own roots.															
Australis.	E	1905	1907		C, S	Lbs.	8	9	10	11	12	13	14	15	16
Do.	F	1903	1905		C, S	4.5	3 to 5	Mar. 26	Mar. 29	May 31	June 4	June 9		Aug. 28	Sept. 15
Le noir.	F	1903	1907	88	S	4.5	4 to 6	Mar. 23	Apr. 1	May 18	May 23	May 31	June 3	Aug. 25	Sept. 5
Do.	Q	1903	1907	86	S	3.2	3 to 4	Mar. 14	Apr. 1	May 16	May 20	May 27	June 19	Aug. 24	Sept. 19
Monticola × Rupestris.	F	1907	1907	89	S	3.4	3 to 5	Mar. 21		May 23	June 5	May 28	June 2	Sept. 25	Oct. 5
Riparia Gloire.	F	1907	1907	91	C, S	3	3 to 5	Mar. 25	Apr. 1	May 14	May 23	May 28	June 2	Aug. 23	Sept. 16
Riparia Gloire.	F	1907	1907	89	C, S	3.3	2 to 6	Mar. 12	Apr. 3	May 30	May 20	May 24	June 1		
Rupestris des Canisettes.	F	1907	1907	85	C, S	3	3 to 4	Mar. 24	Apr. 3	May 16	May 24	June 1	May 27		
Rupestris St. George.	F	1903	1905	94	S	4.2	3 to 6	Mar. 14	Mar. 31	May 12	May 16	May 21	May 27	Aug. 23	Sept. 19
Calmette:															
Adobe Giant.	F	1907	1907	82	S	2 to 4	2 to 4	Mar. 17	Apr. 5	May 18	May 22	June 2		Sept. 6	Sept. 21
Aramon × Rupestris Guzin, No. 1.	F	1907	1907	85	S	1.7	3 to 5	Mar. 18	do.	May 17	do.	June 5		Sept. 8	Sept. 15
Do.	Q	1904	1907	92	C, S	4.5	2 to 5	Mar. 20	Apr. 5	May 23	June 8	May 28	June 20	Sept. 26	Oct. 11
Berlandieri × Riparia, No. 420B.	F	1907	1907	81	C, S	3.5	3 to 5	Mar. 24	Apr. 5	May 15	May 31	May 31	June 2	Sept. 10	Oct. 17
Constantia.	F	1907	1907	86	C, S	5.8	2 to 5	Mar. 23	Apr. 2	do.	June 8	May 30	June 20	Oct. 17	
Herbemont.	Q	1904	1907	89	S	2.6	2 to 4	Mar. 20		June 1	June 8	June 8	June 20	Oct. 17	
Le noir.	Q	1906	1907	82	C, S	3	2 to 4	Mar. 19	Apr. 2	May 12	do.	May 18	May 22	Sept. 23	Oct. 8
Monticola × Riparia, No. 18804.	F	1907	1907	82	C, S	3	2 to 5	Mar. 20	Apr. 5	May 10	May 22	May 28	May 30	Oct. 17	
Monticola × Riparia, No. 18815.	F	1907	1907	88	C, S	3	2 to 5	Mar. 20	Apr. 5	May 15	May 23	May 30	June 3	Oct. 17	
Monticola × Rupestris.	F	1907	1907	87	C, S	1.5	2 to 4	Mar. 24	Apr. 5	May 25	May 25	May 30	June 3	Sept. 5	Sept. 21
Pomroy.	F	1907	1907	84	C, S	1.5	2 to 4	Mar. 24	Apr. 5	May 25	May 25	May 30	June 3	Sept. 5	Sept. 21
Ramsey.	F	1907	1907	81	C, S	2.5	3 to 5	Mar. 21	Apr. 5	May 16	May 22	May 29	June 5	Sept. 14	Sept. 21
Riparia × Rupestris, No. 101.	F	1907	1907	87	C, S	2.2	2 to 3	Mar. 18	do.	May 12	May 23	May 31	June 5	Sept. 14	Sept. 21
Do.	Q	1904	1907	91	C, S	2.3	2 to 6	Mar. 20	do.	May 21	May 25	May 29	June 30	Sept. 26	Oct. 15
Riparia × Rupestris, No. 3309.	F	1907	1907	87	C, S	2.1	2 to 5	Mar. 20	Apr. 5	May 15	May 21	May 29	June 19	Sept. 19	Oct. 11
Do.	Q	1904	1907	84	C, S	2.8	2 to 5	Mar. 25	Apr. 5	May 27	June 4	June 3	June 19	Sept. 26	Oct. 11
Riparia × Rupestris de Jaeger.	F	1907	1907	80	C, S	1.4	2 to 5	Mar. 21	Apr. 6	May 16	May 22	do.	June 4	Sept. 14	Sept. 20
Rupestris × Berlandieri, No. 219A.	F	1907	1907	85	C, S	1.7	2 to 5	Mar. 20	do.	May 14	May 24	May 30	June 2	do.	Sept. 21
Rupestris × Berlandieri, No. 301-37-132.	F	1907	1907	82	S	2.2		Mar. 25	Apr. 1	May 17	May 21	May 29			
Salt Creek.	F	1907	1907	83	S	2.5	3 to 5	Mar. 22	Apr. 2	do.	June 2	June 2			
Solanis Robusta.	F	1907	1907	76	S	1.5		Mar. 23	Apr. 3	May 23	June 20	June 1		Sept. 21	

F	1907	85	c, s	2, 3	2 to 5	Mar. 21	Apr. 5	May 15	May 23	June 29	June 3	Sept. 8	Sept. 21
F	1907	88	s	4	2 to 5	Mar. 27	Mar. 27	May 23	June 3	June 30	Sept. 20	Sept. 20	Oct. 17
O	1904	56	s	1, 2	2 to 5	Mar. 25	Mar. 25	May 22	June 4	May 28	June 20	Sept. 28	Oct. 9
F	1907	83	s	1, 7	2 to 4	Mar. 25	Mar. 25	May 16	May 22	June 2	June 20	Sept. 28	Oct. 9
F	1907	85	s	4	2 to 4	Mar. 25	Mar. 25	May 16	May 22	June 2	June 20	Sept. 28	Oct. 9
Carnigane:													
Gi	1904	92	s	3	2 to 5	Mar. 18	Mar. 27	May 27	June 3	May 30	June 10	Sept. 20	Sept. 26
O	1903	95	s	3, 3	2 to 5	Mar. 19	Mar. 19	May 26	June 3	June 1	June 21	Sept. 28	Oct. 20
O	1903	95	s	3, 3	2 to 5	Mar. 23	Mar. 23	May 25	June 7	June 1	June 21	Sept. 28	Oct. 20
O	1903	92	s	3, 9	1 to 6	Mar. 23	Mar. 23	May 25	June 7	June 1	June 21	Sept. 28	Oct. 11
O	1903	93	s	4, 5	3 to 6	Mar. 26	Mar. 26	May 24	June 7	June 1	June 21	Sept. 28	Oct. 11
O	1904	96	s	2, 9	3 to 6	Feb. 19	Feb. 19	May 24	June 13	June 2	June 21	Sept. 28	Oct. 11
O	1904	96	s	2, 2	3 to 6	Mar. 17	Mar. 17	May 24	June 3	May 29	June 24	Sept. 25	Oct. 10
O	1903	90	c, s	2, 8	2 to 5	Mar. 22	Mar. 22	May 24	June 3	May 29	June 24	Sept. 27	Oct. 6
O	1903	85	s	4, 2	2 to 6	Mar. 22	Mar. 22	May 24	June 5	June 1	June 21	Sept. 27	Oct. 8
O	1903	95	c, s	2, 1	3 to 6	Mar. 23	Mar. 23	May 24	June 12	May 28	June 21	Sept. 27	Oct. 8
O	1904	90	s	2, 1	3 to 6	Mar. 17	Mar. 17	May 23	June 10	May 28	June 24	Sept. 27	Oct. 11
O	1904	90	c, s	3	3 to 6	Mar. 20	Mar. 20	May 26	June 5	June 1	June 20	Sept. 29	Oct. 10
O	1910	90	s	2, 1	3 to 6	Mar. 20	Mar. 20	May 26	June 5	June 1	June 20	Sept. 29	Oct. 10
Gi	1904	91	s	4, 5	2 to 3	Mar. 15	Mar. 15	May 18	June 9	June 10	June 15	Sept. 15	Sept. 20
O	1907	97	c, s	4, 3	3 to 5	Mar. 18	Mar. 18	May 18	June 1	June 22	June 20	Sept. 29	Do.
Gi	1907	92	s	5, 5	2 to 4	Mar. 18	Mar. 18	May 18	June 1	June 22	June 20	Sept. 29	Do.
O	1904	93	c, s	3, 9	2 to 5	Mar. 15	Mar. 15	May 18	June 9	June 10	June 15	Sept. 15	Sept. 20
O	1903	91	c, s	4	2 to 5	Mar. 18	Mar. 18	May 25	June 8	June 2	June 21	Sept. 28	Sept. 30
O	1904	90	s	2, 5	3 to 5	Mar. 20	Mar. 20	May 26	June 8	June 2	June 21	Sept. 28	Oct. 6
O	1904	90	s	2, 7	2 to 5	Mar. 20	Mar. 20	May 26	June 8	June 2	June 21	Sept. 28	Do.
O	1906	84	s	2, 2	2 to 5	Mar. 17	Mar. 17	May 23	June 5	May 27	June 20	Sept. 24	Oct. 11
O	1906	87	s	2, 3	2 to 5	Mar. 17	Mar. 17	May 23	June 5	May 27	June 20	Sept. 26	Oct. 10
Gi	1905	91	c, s	3, 5	3 to 5	Mar. 18	Mar. 18	May 28	June 1	June 29	June 15	Sept. 5	Sept. 25
O	1904	90	c, s	3, 3	3 to 5	Mar. 15	Mar. 15	May 20	June 1	June 29	June 15	Sept. 9	Oct. 10
O	1903	93	s	5, 2	3 to 4	Mar. 17	Mar. 17	May 21	June 5	May 26	June 15	Sept. 10	Oct. 9
O	1904	70	s	5	3 to 5	Mar. 18	Mar. 18	May 20	June 2	May 25	June 10	Sept. 10	Oct. 10
O	1904	92	s	4	3 to 5	Mar. 15	Mar. 15	May 23	June 1	May 29	June 13	Sept. 21	Oct. 10
O	1903	87	s	4, 2	2 to 5	Mar. 14	Mar. 14	May 20	June 8	May 23	June 21	Sept. 23	Sept. 25
O	1903	94	s	4, 4	2 to 5	Mar. 14	Mar. 14	May 24	June 1	May 30	June 13	Sept. 9	Sept. 20
O	1904	75	s	1, 6	3 to 5	Mar. 18	Mar. 18	May 24	June 1	May 29	June 9	Sept. 9	Oct. 1
Castiza:													
O	1910	90	s	2, 1	3 to 6	Mar. 20	Mar. 20	May 26	June 5	June 1	June 20	Sept. 29	Oct. 10
Gi	1904	91	s	4, 5	2 to 3	Mar. 15	Mar. 15	May 18	June 9	June 10	June 15	Sept. 15	Sept. 20
O	1907	97	c, s	4, 3	3 to 5	Mar. 18	Mar. 18	May 18	June 1	June 22	June 20	Sept. 29	Do.
Gi	1907	92	s	5, 5	2 to 4	Mar. 18	Mar. 18	May 18	June 1	June 22	June 20	Sept. 29	Do.
O	1904	93	c, s	3, 9	2 to 5	Mar. 15	Mar. 15	May 18	June 9	June 10	June 15	Sept. 15	Sept. 20
O	1903	91	c, s	4	2 to 5	Mar. 18	Mar. 18	May 25	June 8	June 2	June 21	Sept. 28	Sept. 30
O	1904	90	s	2, 5	3 to 5	Mar. 20	Mar. 20	May 26	June 8	June 2	June 21	Sept. 28	Oct. 6
O	1904	90	s	2, 7	2 to 5	Mar. 20	Mar. 20	May 26	June 8	June 2	June 21	Sept. 28	Do.
O	1906	84	s	2, 2	2 to 5	Mar. 17	Mar. 17	May 23	June 5	May 27	June 20	Sept. 24	Oct. 11
O	1906	87	s	2, 3	2 to 5	Mar. 17	Mar. 17	May 23	June 5	May 27	June 20	Sept. 26	Oct. 10
Gi	1905	91	c, s	3, 5	3 to 5	Mar. 18	Mar. 18	May 28	June 1	June 29	June 15	Sept. 5	Sept. 25
O	1904	90	c, s	3, 3	3 to 5	Mar. 15	Mar. 15	May 20	June 1	June 29	June 15	Sept. 9	Oct. 10
O	1903	93	s	5, 2	3 to 4	Mar. 17	Mar. 17	May 21	June 5	May 26	June 15	Sept. 10	Oct. 9
O	1904	70	s	5	3 to 5	Mar. 18	Mar. 18	May 20	June 2	May 25	June 10	Sept. 10	Oct. 10
O	1904	92	s	4	3 to 5	Mar. 15	Mar. 15	May 23	June 1	May 29	June 13	Sept. 21	Oct. 10
O	1903	87	s	4, 2	2 to 5	Mar. 14	Mar. 14	May 20	June 8	May 23	June 21	Sept. 23	Sept. 25
O	1903	94	s	4, 4	2 to 5	Mar. 14	Mar. 14	May 24	June 1	May 30	June 13	Sept. 9	Sept. 20
O	1904	75	s	1, 6	3 to 5	Mar. 18	Mar. 18	May 24	June 1	May 29	June 9	Sept. 9	Oct. 1

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
Chasselas Cloutat: Own roots. Dog Ridge. Lenoir. Rupestris St. George. Chasselas Doré.	Gi	1907	4		6	7	8	9	10	11	12	13	14	15	16
		1904		<i>P. et.</i>		<i>Lbs.</i>		Mar. 17	Apr. 10	May 28	June 2	May 26	June 15	Sept. 9	Oct. 10
		1903	1906	91	S	3.3	2 to 5	do.	do.	do.	June 3	May 24	June 14	do.	Oct. 1
		1903	1905	88	S	3.9	2 to 5	do.	do.	do.	June 1	May 25	June 20	do.	Oct. 2
Chasselas Dubamel: Own roots. Dog Ridge. Lenoir. Rupestris St. George. Chasselas Doré.	Gi	1905			C, S			Mar. 20	Mar. 26	May 29	June 2	June 7	Aug. 24	Sept. 21	Oct. 21
		1904	1906	91	S	2.8	3 to 5	Mar. 14	Mar. 14	May 25	May 31	May 30	June 12	Sept. 9	Oct. 10
		1903	1905	94	C, S	3.5	3 to 5	do.	do.	May 21	June 1	May 24	June 20	do.	Oct. 9
		1903	1905	94	S	6.1	2 to 5	Mar. 15	do.	May 23	June 3	May 29	do.	do.	Oct. 2
Aramon X Rupestris Ganzin, No. 1. Dog Ridge. Lenoir. Rupestris St. George. Taylor Narbonne. Chasselas Doré.	O	1904	1906	92	C, S	5	2 to 4	Mar. 21	do.	May 31	June 1	June 2	June 13	Sept. 29	Oct. 8
		1903	1905	91	S	4.1	3 to 4	Mar. 15	do.	May 20	June 3	May 26	June 19	Sept. 9	Oct. 10
		1903	1905	90	S	3.4	3 to 5	do.	do.	May 20	do.	May 28	June 14	do.	Sept. 30
		1903	1905	94	S	4.1	2 to 5	Mar. 21	do.	May 21	June 8	May 26	June 24	do.	Oct. 2
Chasselas de Fontainebleau: Rupestris St. George. Chasselas Florence. Own roots. Dog Ridge. Lenoir. Rupestris St. George. Taylor Narbonne. Chasselas Montauban: Own roots. Lenoir. Rupestris St. George. Chasselas Musque Vrai: Own roots. Dog Ridge. Lenoir. Rupestris St. George.	F	1903	1905	85	S	1.5	2 to 6	Mar. 14	Mar. 30	May 15	May 17	May 20	May 24	Aug. 19	Sept. 19
		1905			S			Mar. 8	Apr. 21	May 27	June 1	June 7	do.	Sept. 23	Oct. 10
		1904	1906	91	S	4.7	2 to 5	Mar. 15	Mar. 16	May 24	do.	May 30	June 12	Sept. 9	Oct. 9
		1903	1905	91	S	3.1	3 to 5	Mar. 16	Mar. 16	May 22	May 31	May 27	June 15	do.	Do.
Chasselas Montauban: Own roots. Lenoir. Rupestris St. George. Chasselas Musque Vrai: Own roots. Dog Ridge. Lenoir. Rupestris St. George.	O	1903	1905	82	S	3.9	2 to 4	Mar. 17	Mar. 17	May 25	June 1	June 1	June 18	do.	Do.
		1904	1906		S	1	2 to 3	Mar. 16	do.	May 22	do.	May 27	June 12	Sept. 21	
		1905			C, S			Mar. 18	Apr. 1	do.	May 27	May 26	June 17	Sept. 9	Sept. 25
		1903	1905	45	S	2.5	2 to 6	Mar. 16	do.	May 23	June 3	May 28	June 20	do.	Oct. 12
Chasselas Musque Vrai: Own roots. Dog Ridge. Lenoir. Rupestris St. George.	O	1903	1907	91	S	4.7	2 to 5	Mar. 24	do.	May 21	June 5	May 26	June 20	do.	Oct. 12
		1907			S			Mar. 15	Mar. 20	May 25	June 1	May 27	June 20	Sept. 25	Oct. 10
		1904	1906	91	S	3.2	2 to 5	Mar. 16	Mar. 16	May 22	June 1	May 24	June 18	do.	Oct. 9
		1903	1905	88	S	3.9	2 to 5	Mar. 20	do.	May 20	do.	May 23	June 15	do.	Oct. 10
Rupestris St. George.	O	1903	1905	94	S	6.2	1 to 4	Mar. 17	do.	May 23	do.	May 28	June 15	do.	Oct. 10

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Experiment vine-yard.	Year stock was planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.		
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Chenin Blanc: Own roots..... Dog Ridge..... Lenoir..... Rupestris St. George..... Child of Hall: Lenoir..... Cinsaut: Own roots..... Lenoir..... Rupestris St. George..... Cipro Nero: Own roots..... Clairette à Gros Grain: Lenoir..... Monticola X Rupestris..... Clairette Blanche: Own roots..... Clairette Mazi: Own roots..... Lenoir..... Riparia Gloire..... Courna Nostra: Australis..... Lenoir..... Rupestris Martin..... Columbus Blanc: Own roots..... Commandeur: Riparia X Rupestris, No. 3306.....	Gi	1905	1906	P. et.	c, s	Lbs.	2 to 4	Mar. 15	Mar. 28	May 26	May 30	May 30	June 5	Aug. 28	Sept. 25	
	O	1904	1906	91	c, s	3.6	2 to 4	Mar. 20		May 24	June 1	May 29	June 15	Sept. 23	Oct. 17	
	O	1903	1905	93	c, s	5.8	2 to 5	Mar. 18		May 21	do.	May 24	June 20	Sept. 15	Sept. 28	
	O	1903	1906	90	s	5.6	2 to 4	Mar. 19		May 24	do.	May 29	June 17	Sept. 20	Oct. 1	
	O	1904	1907	89	s	3.2	3 to 5	Mar. 18		May 23	do.	May 28	June 16	Sept. 28	Oct. 6	
	Gi	1904						Mar. 21	Mar. 29	May 26	June 4	May 30	June 9	Aug. 28	Sept. 20	
	O	1903	1905	84	s	2.2	2 to 5	Mar. 17		May 24	June 1	June 2	June 10	Sept. 28	Oct. 4	
	O	1903	1905	93	s	3.9	2 to 4	Mar. 20		do.	June 5	June 5	May 29	Sept. 26	Sept. 30	
	Gi	1904						Mar. 27	Apr. 1	June 4	do.	do.	June 9	Sept. 24		
	O	1904	1907	88	s	3	2 to 5	Mar. 16		Mar. 30	May 25	May 29	June 20	Sept. 30	Oct. 8	
	F	1907	1907	82	c, s	2.3	3 to 6	Mar. 14		Mar. 30	May 14	May 22	May 30	Sept. 21		
	Gi	1904							Mar. 20	Apr. 1	May 27	June 4	May 31	June 9	Sept. 20	Sept. 28
	Gi	1905							do.		May 29	June 2	June 2	June 7	Aug. 28	Sept. 20
	O	1906							Mar. 22		May 30	May 31	June 4	do.	Sept. 5	Oct. 7
	O	1904	1912	85	c, s	4	3 to 4	Mar. 19			June 1	June 8	June 6	June 23	Sept. 22	Do.
	F	1907	1907	88	s	4.8	do.		Mar. 20		May 25	May 31	May 30	June 13	Sept. 30	Oct. 3
O	1904	1907	84	s	2.8	2 to 4		Mar. 19		May 24	June 8	June 8	do.	Sept. 22		
F	1907	1907	90	c, s	5.7	2 to 5		Mar. 23		May 27	do.	do.	do.	do.		
Gi	1904							Mar. 21	Mar. 30	May 24	June 6	May 29	June 12	Aug. 29	Sept. 26	
O	1904			85	s	6.5	2 to 3	Mar. 20		May 12	June 1	May 17	June 15	Sept. 25	Oct. 1	

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year planted was	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
1		3	4	5	6	7	8	9	10	11	12	13	14	15	16
Danquie:	Gi														
Own roots.....	O	1904			s	Lbs.	2 to 5	Mar. 24	Mar. 28	June 2	June 4	June 7	June 12	Sept. 24	Sept. 25
Dog Ridge.....	O	1904	1907	86	s	2	2 to 5	Mar. 17	Mar. 28	May 23	June 31	May 30	June 12	Sept. 9	Do.
Lenoir.....	O	1903	1905	89	s	3.1	2 to 4	Mar. 15	.....	May 20	June 2	May 23	June 11	.....	Do.
Rupestris St. George.....	O	1903	1906	82	c, s	3.9	2 to 4	Mar. 20	.....	May 23	June 9	May 29	June 7	.....	Do.
Taylor Narbonne.....	O	1904	1906	84	s	1.8	2 to 4	.....	.....	May 19	June 9	May 24	June 15	.....	Do.
Dattler de Beyrouth:	O														
Lenoir.....	O	1903	1912	58	s	2.5		Mar. 16	.....	June 4	.....	June 9	.....	.....	.....
Dracon Superb:	Gi														
Own roots.....	O	1907			c, s			Mar. 10	Apr. 1	May 26	.....	.....	.....	Sept. 19	.....
Diamond:	Gi														
Own roots.....	O	1905			s			Mar. 23	.....	.....	.....	.....	.....	Sept. 25	.....
Dordrecht:	Gi														
Own roots.....	O	1904			s			Mar. 18	Mar. 28	May 2	June 1	May 31	June 7	Sept. 20	Sept. 26
Ancient X Rupestris Ganzin, No. 1.....	O	1904	1909	.....	s		3 to 4	Mar. 16	.....	June 2	June 8	June 8	June 22	Sept. 20	.....
Dog Ridge.....	O	1904	1907	94	s	3.5	3 to 4	Mar. 20	.....	June 25	June 5	May 29	June 20	Oct. 10	Oct. 20
Lenoir.....	O	1903	1909	89	s	3.1	3 to 4	Mar. 17	.....	June 3	June 8	June 9	June 25	Oct. 2	Oct. 15
Monvetro X Rupestris, No. 1202.....	O	1903	1905	90	s	2.7	3 to 4	Mar. 18	.....	June 24	June 6	May 30	June 17	Oct. 10	Oct. 10
Rupestris St. George.....	O	1904	1909	95	s	3	3 to 4	Mar. 21	.....	June 3	June 2	June 8	June 21	Oct. 5	Oct. 12
Rupestris St. George.....	O	1903	1915	89	s	3.3	2 to 4	Mar. 19	.....	May 22	June 2	May 28	June 20	Sept. 28	Oct. 10
Solons X Riparia, No. 1616.....	O	1901	1909	93	s	4.2	2 to 4	Mar. 23	.....	May 25	June 1	June 8	June 15	Oct. 12	Oct. 12
Taylor Narbonne.....	O	1904	1906	87	s	2.2	3 to 4	Mar. 18	.....	May 27	June 1	June 2	June 13	Sept. 30	Oct. 4
Dracon:	Gi														
Own roots.....	O	1904			s			Mar. 14	Mar. 24	May 28	June 5	.....	June 10	Aug. 29	Sept. 25
Dronkane:	O														
Lenoir.....	O	1904	1907	88	s	3	3 to 5	Mar. 26	.....	May 26	June 15	June 1	June 30	Sept. 25	Oct. 25
Rupestris des Caussettes.....	F	1907	1907	88	s	2	4 to 5	Mar. 21	Apr. 1	May 16	May 22	May 27	.....	Oct. 17	.....
Duc de Magenta:	F														
Rupestris St. George.....	F	1903	1905	86	s	2.3	5 to 7	Mar. 9	Mar. 15	May 10	May 16	May 20	May 26	Aug. 5	Sept. 13
Duc de Malakoff:	Gi														
Own roots.....	O	1905			c, s			Mar. 18	Mar. 27	May 29	May 31	June 6	.....	Aug. 28	Sept. 25

Emathia:	O 1904	1908	1908	90	s	1.5	Mar. 15	June 15	June 4	June 5	June 8	June 7	June 20	Sept. 20	Oct. 7
Dog Ridge	O	1904	1908	90	s	1.5	Mar. 15	June 15	June 4	June 5	June 8	June 7	June 20	Sept. 20	Oct. 7
Lenoir	O	1904	1908	90	s	1.5	Mar. 15	June 15	June 4	June 5	June 8	June 7	June 20	Sept. 20	Oct. 7
Emperor:	O	1903	1909	96	s	2.5	Mar. 21	Mar. 21	June 5	June 6	June 10	June 10	June 21	Sept. 20	Oct. 7
Rupestris St. George.	O	1903	1909	93	s	4.2	Mar. 21	Mar. 21	June 5	June 6	June 10	June 10	June 21	Sept. 20	Oct. 7
Erz Roumli:	O	1906	1909	85	s	.8	Mar. 19	Mar. 19	June 6	June 14	June 12	June 12	June 14	Sept. 20	Oct. 7
Lenoir	O	1906	1909	85	s	.8	Mar. 19	Mar. 19	June 6	June 14	June 12	June 12	June 14	Sept. 20	Oct. 7
Etrare de l'Adhui:	O	1906	1909	85	s	.8	Mar. 19	Mar. 19	June 6	June 14	June 12	June 12	June 14	Sept. 20	Oct. 7
Oven roots	O	1906	1909	85	s	.8	Mar. 19	Mar. 19	June 6	June 14	June 12	June 12	June 14	Sept. 20	Oct. 7
Fajoumi Jaune:	Gi	1904	1907	90	s	3.1	Mar. 17	Mar. 17	Mar. 22	Mar. 22	Mar. 22	Mar. 22	Mar. 22	Sept. 15	Oct. 13
Lenoir	O	1904	1907	90	s	3.1	Mar. 17	Mar. 17	Mar. 22	Mar. 22	Mar. 22	Mar. 22	Mar. 22	Sept. 15	Oct. 13
Rupestris St. George.	O	1904	1907	90	s	3.1	Mar. 17	Mar. 17	Mar. 22	Mar. 22	Mar. 22	Mar. 22	Mar. 22	Sept. 15	Oct. 13
Faphy:	F	1901	1907	85	c, s	2.4	Mar. 18	Mar. 18	June 24	June 8	May 29	May 29	June 20	Sept. 20	Oct. 15
Riparia X Rupestris, No. 3309.	F	1909	1909	94	c, s	2.5	Mar. 13	Mar. 13	May 22	June 8	May 29	May 29	June 20	Sept. 20	Oct. 15
Rupestris St. George.	F	1907	1907	93	c, s	3.3	Mar. 12	Mar. 12	May 18	May 22	June 4	June 4	June 20	Sept. 20	Oct. 15
Fehér Góher Noir:	Gi	1904	1907	89	s	2.6	Mar. 15	Mar. 15	Mar. 24	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Oven roots	O	1904	1907	89	s	2.6	Mar. 15	Mar. 15	Mar. 24	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Fehér Som:	O	1904	1907	89	s	2.6	Mar. 15	Mar. 15	Mar. 24	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Lenoir	O	1904	1907	89	s	2.6	Mar. 15	Mar. 15	Mar. 24	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Rupestris St. George.	O	1904	1907	89	s	2.6	Mar. 15	Mar. 15	Mar. 24	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Fehér Sagos:	F	1904	1906	87	s	1.7	Mar. 13	Mar. 13	Mar. 30	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Adobe Giant.	F	1904	1906	96	c, s	6	Mar. 13	Mar. 13	Mar. 30	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Aramon X Rupestris Ganzin, No. 1.	F	1903	1905	91	c, s	2	Mar. 12	Mar. 12	Mar. 25	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Dog Ridge.	F	1903	1905	84	c, s	1.7	Mar. 8	Mar. 8	Mar. 20	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Herbement.	F	1903	1905	85	s	1.4	Mar. 11	Mar. 11	Mar. 30	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Lenoir	F	1903	1905	85	s	1.4	Mar. 11	Mar. 11	Mar. 30	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Mourvedre X Rupestris, No. 1202.	F	1904	1905	93	c, s	3.7	Mar. 25	Mar. 25	Mar. 30	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Riparia Gloire	F	1903	1905	90	s	2.6	Mar. 14	Mar. 14	Mar. 27	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Riparia X Rupestris, No. 101.	F	1904	1906	88	s	3.3	Mar. 8	Mar. 8	Mar. 28	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Riparia X Rupestris, No. 3309.	F	1904	1906	93	c, s	3.4	Mar. 2	Mar. 2	Mar. 30	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Rupestris Martin.	F	1903	1905	82	s	1.8	Mar. 2	Mar. 2	Mar. 30	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Rupestris St. George.	F	1903	1905	91	s	3	Mar. 2	Mar. 2	Mar. 30	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Sali Creek	F	1903	1905	85	s	1.5	Mar. 6	Mar. 6	Mar. 30	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Solonis X Riparia, No. 1616.	F	1904	1906	92	c, s	4.6	Mar. 8	Mar. 8	Mar. 30	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Taylor Narbonne.	F	1904	1906	86	c, s	2.5	Mar. 13	Mar. 13	Mar. 25	May 22	May 27	May 27	June 5	Sept. 15	Sept. 23
Ferrara:	O	1904	1908	92	s	3.2	Mar. 22	Mar. 22	June 6	June 11	June 10	June 10	June 23	Sept. 27	Oct. 4
Herbement.	O	1904	1908	86	s	2.1	Mar. 18	Mar. 18	June 6	June 11	June 10	June 10	June 23	Sept. 27	Oct. 4
Lenoir	O	1904	1908	86	s	2.1	Mar. 18	Mar. 18	June 6	June 11	June 10	June 10	June 23	Sept. 27	Oct. 4
Fimlendo:	Gi	1907	1907	87	s	3.3	Mar. 24	Mar. 24	Apr. 1	May 24	May 28	May 30	June 21	Sept. 27	Oct. 15
Oven roots.	O	1904	1906	87	s	3.3	Mar. 24	Mar. 24	Apr. 1	May 24	May 28	May 30	June 21	Sept. 27	Oct. 15
Pog Ridge.	O	1903	1905	88	s	2	Mar. 24	Mar. 24	Apr. 1	May 24	May 28	May 30	June 21	Sept. 27	Oct. 15
Lenoir	O	1903	1905	88	s	2	Mar. 24	Mar. 24	Apr. 1	May 24	May 28	May 30	June 21	Sept. 27	Oct. 15
Rupestris St. George.	O	1903	1905	88	s	3.2	Mar. 22	Mar. 22	May 23	June 8	May 29	May 29	June 23	Sept. 27	Oct. 10
Taylor Narbonne.	O	1904	1906	88	s	2.3	Mar. 24	Mar. 24	May 21	June 8	May 26	May 26	June 21	Sept. 25	Oct. 4
Flame Tokay:	Gi	1904	1907	91	s	5	Mar. 18	Mar. 18	Mar. 29	June 7	May 31	May 31	June 11	Sept. 26	Sept. 26
Oven roots.	F	1907	1907	91	s	5	Mar. 18	Mar. 18	Mar. 29	June 7	May 31	May 31	June 11	Sept. 26	Sept. 26
Canada.	O	1904	1907	94	s	3.5	Mar. 24	Mar. 24	May 24	June 8	May 29	May 29	June 24	Sept. 30	Oct. 14
Pog Ridge.	O	1904	1907	94	s	3.5	Mar. 24	Mar. 24	May 24	June 8	May 29	May 29	June 24	Sept. 30	Oct. 14
Lenoir	O	1904	1907	93	s	3.5	Mar. 21	Mar. 21	May 21	June 8	May 29	May 29	June 24	Sept. 27	Oct. 14

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California.—(continued.)

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year planted was	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
Flame Tokay—Continued.								9	10	11	12	13	14	15	16
Monticola × Riparia, No. 554.	F	1907	1907	P. cl.	c, s	Lbs.	3 to 5	Mar. 22	Apr. 1	May 17	May 22	May 30	.....	Sept. 29	.....
Monticola × Riparia, No. 18804.	F	1907	1907	95	c, s	7	3 to 5	Mar. 23	do.	May 18	May 26	May 28	.....	do.	.....
Monticola × Riparia, No. 18808.	F	1907	1907	97	s	7	3 to 6	Mar. 24	Apr. 6	May 20	May 25	May 30	.....	do.	.....
Monticola × Riparia, No. 18815.	F	1907	1907	97	s	6.9	3 to 6	Mar. 23	do.	do.	May 22	do.	.....	Sept. 29	.....
Riparia × Grandes Feuilles.	F	1907	1907	90	s	4.9	3 to 5	Mar. 23	Apr. 2	May 14	May 23	May 24	.....	Sept. 25	.....
Riparia × Rupestris, No. 101.	O	1904	1907	91	s	3.1	2 to 4	Mar. 21	Mar. 22	May 24	June 1	May 30	.....	Sept. 30	.....
Riparia × Rupestris, No. 3309.	O	1904	1907	94	s	4.2	3 to 5	Mar. 25	Apr. 2	May 21	June 3	do.	.....	Sept. 29	.....
Do.	F	1907	1907	93	c, s	7.1	3 to 5	Mar. 23	do.	May 19	May 24	June 1	.....	Sept. 25	.....
Rupestris Martin.	F	1907	1907	89	c, s	2.7	3 to 5	Mar. 23	Apr. 1	May 23	May 24	May 30	.....	Sept. 12	.....
Salt Creek.	F	1907	1907	91	c, s	4.2	3 to 5	Apr. 1	Apr. 2	May 14	May 24	May 24	.....	Sept. 25	.....
Taylor Narbonne.	F	1907	1907	95	c, s	4.4	3 to 4	Mar. 23	Apr. 2	May 14	May 24	May 24	.....	Sept. 25	.....
Folle Blanche.	F	1907	1907	79	s	.9	3 to 6	Mar. 8	Mar. 30	May 15	May 20	May 20	.....	Sept. 13	.....
Rupestris St. George.	F	1903	1905												
Poster.															
Own roots.	Gl	1905	1905		s			Mar. 15	Mar. 28	May 24	May 27	May 30	.....	Sept. 5	.....
Lenoir.	F	1903	1905	88	s	1.4	3 to 6	Mar. 11	Mar. 25	May 13	May 18	May 22	.....	Sept. 22	.....
Riparia Gloire.	F	1903	1905	84	s	1.8	3 to 5	Mar. 14	Mar. 30	May 12	May 19	May 23	.....	Sept. 19	.....
Rupestris St. George.	F	1903	1905	90	s	3	2 to 6	Mar. 15	do.	May 15	May 20	May 21	.....	Sept. 10	.....
Frankenthal Precoce.															
Herbemont.	O	1904	1909	72	s	1.1		Mar. 24	.....	June 2	June 7	June 7	.....	Aug. 24	.....
Lenoir.	O	1903	1905	90	c, s	2.2	3 to 5	Mar. 18	Mar. 24	May 20	June 1	May 29	.....	Sept. 23	.....
Monticola × Riparia, No. 18808.	F	1907	1907	90	c, s	3.3		Mar. 20	Mar. 30	May 14	May 24	May 28	.....	Aug. 30	.....
Monticola × Riparia, No. 18815.	F	1907	1907	87	c, s	2.7	4 to 6	do.	do.	May 16	May 23	do.	.....	Do.	.....
Rupestris St. George.	O	1903	1905	92	c, s	2.2	3 to 4	Mar. 29	do.	May 16	May 23	do.	.....	Sept. 23	.....
Solonis × Othello.	O	1907	1907	89	c, s	3	3 to 4	Mar. 29	Apr. 2	May 22	May 22	May 28	.....	Oct. 17	.....
Solonis × Riparia, No. 1616.	F	1907	1907	89	s	3.7	3 to 5	Mar. 25	Apr. 2	May 15	May 22	May 28	.....	Sept. 1	.....
Frederickton.															
Dog Ridge.	F	1907	1907	92	c, s	5		do.	Apr. 1	May 13	May 23	May 19	.....	Sept. 25	.....
Lenoir.	O	1904	1907	91	s	2.8	3 to 4	Mar. 17	Apr. 1	May 25	June 5	May 30	.....	Sept. 25	.....
Rupestris St. George.	F	1907	1907	92	s			Mar. 31	Apr. 1	May 21	May 23	June 4	.....	Sept. 25	.....

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California.—(Continued.)

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
Green Hungarian—Continued.															
Rupestris Mission.....	O	1907	1909	.....	S	Lbs.	.....	Mar. 18	.....	June 2	June 5	.....	.....	.....	.....
Rupestris St. George.....	O	1903	1905	67	S	1.4	2 to 5	.....	.....	June 20	June 1	.....	.....	.....	.....
Sal. Creek.....	O	1903	1905	79	S	2	2 to 5	.....	.....	May 21	.....	.....	.....	.....	.....
Solonis Robusta.....	O	1907	1909	82	S	1.5	3 to 5	Mar. 21	.....	May 25	June 1	.....	.....	.....	.....
Solonis X Othello, No. 1013.	O	1907	1909	83	S	1.9	2 to 3	Mar. 20	.....	June 1	.....	.....	.....	.....	.....
Solonis X Othello, No. 1616.	O	1904	1906	68	S	1.9	2 to 5	Mar. 19	.....	June 1	June 10	.....	.....	.....	.....
Taylor Narbonne.....	O	1901	1904	84	S	1.7	3 to 5	Mar. 22	.....	May 25	June 1	.....	.....	.....	.....
Greendine.															
Own roots.....	Cl	1904	.....	.....	S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dog Ridge.....	O	1904	1906	91	C, S	4.2	2 to 4	Mar. 24	Mar. 28	May 28	May 31	June 1	June 7	Sept. 20	Oct. 24
Lenoir.....	O	1903	1905	91	C, S	4	2 to 4	Mar. 20	May 20	May 21	June 2	May 26	June 19	Sept. 29	Oct. 15
Rupestris St. George.....	O	1903	1905	90	S	4.7	2 to 4	Mar. 19	.....	May 21	June 8	May 27	June 18	Sept. 25	Oct. 6
Taylor Narbonne.....	O	1904	1906	88	S	2.8	2 to 4	Mar. 22	.....	May 21	June 1	May 30	June 26	.....	Oct. 9
Gros Blanc de Lausanne.															
Lenoir.....	O	1904	1907	86	S	2	3 to 6	Mar. 20	.....	May 20	June 10	May 25	June 20	Sept. 28	Oct. 7
Solonis X Othello.....	F	1907	1907	85	C, S	2.5	3 to 4	Mar. 16	Mar. 30	May 10	May 21	May 29	.....	Aug. 25	.....
Gros Guillaume.															
Lenoir.....	O	1904	1911	90	S	2.5	.....	.....	.....	May 26	May 30	June 5	.....	Sept. 15	Sept. 25
Gros Marzane.															
Own roots.....	Cl	1904	.....	.....	S	.....	.....	Mar. 16	Apr. 1	May 26	May 29	June 4	.....	Sept. 25	.....
Gros Marce.															
Own roots.....	Cl	1905	.....	.....	S	.....	.....	Mar. 13	.....	May 18	May 29	June 4	.....	Sept. 25	.....
Gros Verdol.															
Own roots.....	Cl	1907	.....	.....	S	.....	.....	Mar. 20	.....	May 26	May 31	June 4	.....	.....	.....
Dog Ridge.....	F	1903	1905	92	S	4	3 to 6	Mar. 17	.....	May 16	May 25	June 4	Aug. 24	Sept. 20	Sept. 20
Do.....	O	1904	1906	90	S	4.5	3 to 5	Mar. 17	.....	May 25	June 31	May 30	June 15	Sept. 28	Oct. 5
Lenoir.....	O	1903	1905	90	S	2.8	2 to 4	Mar. 18	.....	May 15	June 3	May 27	June 14	Sept. 27	Do.
Do.....	F	1903	1905	80	S	2	2 to 4	Mar. 14	Mar. 30	May 13	May 18	May 23	May 29	Aug. 24	Sept. 19
Do.....	O	1903	1905	88	S	1.7	2 to 5	Mar. 12	Apr. 1	May 14	May 21	May 24	May 30	.....	Do.
Rupestris St. George.....	F	1903	1905	89	S	3.7	2 to 5	Mar. 20	.....	May 20	May 31	May 26	June 20	Sept. 30	Oct. 10
Do.....	O	1903	1905	89	S	2.1	2 to 4	.....	.....	May 23	June 4	.....	.....	.....	.....
Taylor Narbonne.....	O	1904	1906	86	S	2.1	2 to 4	.....	.....	May 23	June 4	June 3	.....	Sept. 27	Oct. 6

[illegible]

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California.—Continued.

Variety and stock (on own roots, if so stated).	Experiment yard.	Year planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early season.	Late season.	Early season.	Late season.	Early season.	Late season.	Early season.	Late season.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Johannisberger: Own roots.	Gl	1904			c, s	Lbs.		Mar. 15	Mar. 26	May 29		June 3		Sept. 5	Sept. 20
Jura Muscat: Lenoir.	F	1903			s	8		Mar. 7	Mar. 25	May 4	May 18	May 20	May 25	Aug. 10	Sept. 19
Riparia Gloire.	F	1903	1905	81	s	3.3	2 to 5	Mar. 8	Mar. 20	May 12	May 21	May 25	May 31	Aug. 20	Sept. 19
Rupestris St. George.	F	1903	1905	91	s	2.5	3 to 5	Mar. 9	do.	May 15	May 18	May 21	June 5	Aug. 5	do.
Kabardak: Own roots.	O	1904			s	8	2 to 3	Mar. 22		May 16	June 1	do.	June 20	Sept. 29	Oct. 15
Kadarka: Own roots.	Gl	1904			c, s			Mar. 25	Mar. 27	May 30	June 6	June 11	June 15	Sept. 15	Sept. 25
Dog Ridge.	F	1903	1905	93	s	4.8	2 to 6	Mar. 14	Apr. 3	May 23	May 30	May 30	June 10	Sept. 10	Sept. 20
Lenoir.	F	1903	1905	92	c, s	3.3	2 to 6	Mar. 7	Apr. 1	May 20	May 22	May 27	June 4	do.	Sept. 19
Riparia Gloire.	F	1903	1905	90	c, s	3.9	3 to 7	Mar. 8	Apr. 5	do.	May 27	May 28	June 7	Sept. 5	do.
Rupestris St. George.	F	1903	1905	95	c, s	4	1 to 6	Mar. 13	Apr. 1	May 11	May 20	May 24	May 30	Sept. 12	do.
Keech's Albany-Blanc. Lenoir.	O	1904	1907	84	s	2.6	3 to 5	Mar. 21		May 25	June 12	May 30	June 28	Sept. 23	Oct. 5
Solais X Othello, No. 1613. Lenoir.	F	1907	1907	92	s	3.5		Mar. 23	Mar. 30	May 20	May 22	June 4			
Kerendine. Lenoir.	O	1904	1907	90	c, s	4	2 to 5	Mar. 22		do.	June 5	May 29	June 23	Sept. 23	Oct. 20
Riparia X Rupestris, No. 3309. Lenoir.	F	1907	1907	90	c, s	3.5		Mar. 20	Apr. 5	May 16	May 23	June 2			
Key: Herbemont.	O	1904	1909	47	s	9		Mar. 22		June 5	June 13	June 12	June 17		
Lenoir.	O	1901	1906	83	s	2	1 to 5	Mar. 24		June 27	June 13	June 1	June 23	Sept. 30	Do.
Kleinburger. Own roots.	Gl	1904			s			Mar. 10	Apr. 5	May 22	May 30	May 27	June 5	Aug. 29	Sept. 28
Köber: Own roots.	Gl	1904			s			do.	Mar. 30	May 27	do.	May 31	do.	Sept. 10	Sept. 23
Dog Ridge.	O	1904	1906	88	c, s	2.6	2 to 4	Mar. 17		do.	June 8	June 15	June 15	Sept. 26	Oct. 3
Lenoir.	O	1903	1905	82	s	2.4	2 to 6	Mar. 15		May 23	June 8	May 27	June 15	do.	Oct. 15
Rupestris St. George.	O	1903	1905	83	s	2.8	3 to 5	Mar. 16		May 23	June 1	May 25	June 17	do.	Oct. 10
Taylor Narbonne.	O	1904	1906	73	s	3	2 to 4	Mar. 18		May 22	do.	do.	June 13	do.	Oct. 4

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year planted.	Year grafted.	Congenality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
I		3	4	5	6	7	8	9	10	11	12	13	14	15	16
Listan—Continued.				<i>P. et.</i>		<i>Lbs.</i>									
Riparia × Rupestris, No. 3306.	O	1907	1909	84	s	1.3	3 to 4	Mar. 18	Apr. 2	May 31	June 8	June 4	June 21	Sept. 25	
Riparia × Rupestris, No. 3309.	F	1907	1907	82	c, s	3.2	4 to 5	Mar. 21	Apr. 2	May 12	May 21	May 26	June 11	Sept. 21	
Do.	O	1904	1906	82	s	2.3	4 to 5	Mar. 18	Apr. 2	May 23	June 8	May 28	June 14	Sept. 26	
Rupestris Martin.	O	1903	1903	83	s	3.8	2 to 3	Mar. 20	Apr. 2	May 22	June 5	June 10	June 20	Sept. 22	
Rupestris Metcallee.	O	1907	1909	87	s	1.2	3 to 4	Mar. 17	Apr. 2	June 3	June 8	June 13	June 20	Sept. 25	
Rupestris Mission.	O	1907	1909	87	s	1.9	4 to 5	Mar. 13	Apr. 1	June 3	June 8	June 13	June 20	Sept. 25	
Rupestris St. George.	F	1903	1903	88	s	1.3	4 to 5	Mar. 18	Apr. 1	May 16	May 20	May 22	June 1	Sept. 18	
Do.	F	1903	1907	91	s	3.2	2 to 3	Mar. 22	Apr. 1	May 20	June 1	May 26	June 13	Sept. 21	
Rupestris × Berlandieri, No. 210A.	F	1903	1907	90	c, s	3.1	2 to 3	Mar. 19	Apr. 2	May 22	June 5	May 27	June 10	Sept. 21	
Salt Creek.	F	1907	1907	97	s	6.4	4 to 5	Mar. 18	Apr. 2	June 15	June 22	May 30	June 18	Oct. 5	
Solonis Robusta.	F	1907	1909	90	c, s	3.4	2 to 4	Mar. 18	Apr. 2	June 15	June 22	May 30	June 18	Oct. 11	
Do.	O	1907	1909	90	s	3.4	2 to 4	Mar. 18	Apr. 2	June 15	June 22	May 30	June 18	Oct. 11	
Rupestris × Othello.	F	1907	1907	97	c, s	6.8	2 to 5	Mar. 25	Apr. 1	June 2	June 2	June 7	June 18	Sept. 25	
Solonis × Othello.	F	1907	1909	88	c, s	1.2	3 to 4	Mar. 20	Apr. 1	June 2	June 2	June 8	June 10	Sept. 25	
Solonis × Riparia, No. 1613.	O	1907	1909	91	c, s	3.2	2 to 4	Mar. 18	Apr. 1	June 2	June 2	June 8	June 10	Sept. 25	
Solonis × Riparia, No. 1616.	O	1904	1906	93	c, s	3.2	2 to 4	Mar. 16	Apr. 1	May 25	June 7	May 30	June 11	Sept. 22	
Taureau Narbonne.	O	1904	1906	93	c, s	3.3	2 to 4	Mar. 16	Apr. 1	May 25	June 7	May 30	June 11	Sept. 22	
Valencia.	F	1907	1907	96	c, s	8.5	2 to 5	Mar. 19	Apr. 1	May 15	May 23	May 31	June 11	Oct. 8	
Lugliana Nova.															
Adobe Giant.	F	1904	1906	82	s	1.5	3 to 5	Mar. 13	Apr. 1	May 18	May 20	May 25	May 30	Sept. 14	
Dee Ridge.	F	1903	1905	86	s	1.7	3 to 6	Mar. 7	Apr. 3	May 14	May 14	May 21	May 29	Sept. 20	
Riparia × Rupestris, No. 3309.	F	1907	1907	88	c, s	1.5	3 to 6	Mar. 15	Apr. 3	May 23	May 23	May 23	May 23	Sept. 19	
Rupestris St. George.	F	1903	1905	87	c, s	2.1	4 to 6	Mar. 11	Mar. 25	May 10	May 19	May 21	May 23	Sept. 19	
Maemier.															
Own roots.	Cl	1907			s			Mar. 10	Apr. 5	May 20	May 25	May 25	June 5	Sept. 4	
Madeline Angevine.															
Own roots.	Cl	1905			s			do.	Mar. 30	May 25	June 2	June 1	June 7	Aug. 29	
Dee Ridge.	O	1904	1907	90	s	1.8	2 to 5	Mar. 15	Mar. 30	May 19	May 19	May 24	June 11	Sept. 20	
Lenoir.	O	1903	1905	90	s	2.6	2 to 4	Mar. 15	Mar. 30	May 21	May 26	May 28	June 6	do.	
Rupestris St. George.	O	1903	1905	89	s	5.1	2 to 4	Mar. 16	Mar. 30	May 25	May 31	June 1	June 15	Sept. 22	
Madeline Blanche.															
Own roots.	Cl	1905			c, s			Mar. 25	Mar. 29	May 30	June 6	June 3	June 11	Aug. 28	

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experimental vineyards in California—Continued.

Variety and stock (on own roots, if so stated)	Experiment vineyard.	Year stock was planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
1	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mamelont:				<i>P. cl.</i>	<i>s</i>	<i>lbs.</i>									
Own roots.....	Gi	1907	.....	.....	.....	.....	.....	Mar. 15	Apr. 8	May 20	May 30	May 30	June 2	Sept. 22	Oct. 8
Dog Ridge.....	O	1904	1907	91	c, s	3.1	3 to 5	Mar. 17	.....	May 23	June 3	May 19	June 13	Sept. 19	Oct. 6
Lenoir.....	O	1903	1905	94	c, s	4.2	2 to 5	Mar. 16	.....	May 23	June 3	May 27	June 13	Sept. 21	Oct. 8
Rupestris St. George.....	O	1903	1905	90	s	4.7	2 to 4	Mar. 17	.....	May 24	June 8	May 30	June 13	Sept. 20	Oct. 4
Taylor Narbonne.....	O	1904	1906	87	s	2.3	3 to 5	Mar. 21	.....	.....	.....	May 29	June 16	Sept. 20	Oct. 4
Valencia.....	F	1907	1907	89	c, s	.9	.....	Mar. 12	.....	.....	.....	May 29	June 16	Sept. 20	Oct. 4
Manteno de Filas:															
Own roots.....	Gi	1904	.....	.....	c, s	.....	.....	Mar. 10	Mar. 24	May 26	June 3	May 30	June 9	Sept. 20	Sept. 25
Adobe Giant.....	F	1904	1906	88	s	2.4	3 to 4	Mar. 11	Mar. 26	May 12	May 19	May 19	May 27	Sept. 15	Sept. 20
Armon X Rupestris Ganzin, No. 1.....	F	1904	1906	93	c, s	2.6	3 to 6	Mar. 10	Mar. 25	May 14	May 20	May 23	May 30	Sept. 15	.....
Dog Ridge.....	F	1903	1905	86	c, s	2.5	3 to 5	Mar. 13	Mar. 27	May 13	May 20	May 24	May 30	Sept. 15	.....
Herbemont.....	F	1903	1905	85	s	1	3 to 5	Mar. 7	Mar. 27	May 13	May 18	May 24	May 30	Sept. 15	.....
Lenoir.....	F	1903	1905	87	s	5.6	3 to 5	.....	Mar. 27	May 20	June 1	May 23	May 26	Sept. 10	Oct. 23
Do.....	O	1903	1905	89	s	5.6	3 to 4	Mar. 24	Mar. 27	May 20	June 1	May 23	May 26	Sept. 10	Oct. 23
Mourvedre X Rupestris, No. 1202.....	F	1904	1906	83	c, s	3.7	3 to 6	Mar. 12	Mar. 26	May 15	May 20	May 24	May 30	Sept. 20	Sept. 25
Riparia Gloire.....	F	1903	1905	83	c, s	3.1	3 to 5	.....	Mar. 20	May 15	May 21	May 25	May 30	Sept. 14	Sept. 19
Riparia X Rupestris, No. 101.....	F	1903	1905	83	c, s	2.8	3 to 5	.....	Mar. 20	May 12	May 19	May 23	May 29	Sept. 14	Sept. 19
Riparia X Rupestris, No. 5309.....	F	1904	1906	83	c, s	2.9	3 to 5	Mar. 13	Mar. 26	May 13	May 22	May 26	May 29	Sept. 14	Sept. 19
Rupestris Martin.....	F	1903	1905	89	c, s	1.3	3 to 5	Mar. 13	Mar. 25	May 14	May 18	May 20	June 2	Sept. 10	Sept. 19
Rupestris St. George.....	F	1903	1905	89	c, s	3.4	2 to 4	Mar. 20	Mar. 25	May 21	June 2	May 27	June 15	Sept. 20	Sept. 25
Salt Creek.....	O	1903	1908	87	s	3.1	2 to 6	Mar. 6	Mar. 30	May 13	May 21	May 24	June 3	Sept. 5	Sept. 10
Solonis X Riparia, No. 1616.....	F	1903	1905	86	c, s	1.7	4 to 6	Mar. 12	Mar. 25	May 14	May 23	May 25	May 28	Sept. 13	Sept. 16
Taylor Narbonne.....	F	1903	1905	92	c, s	4	4 to 5	Mar. 6	Mar. 25	May 15	.....	May 23	May 29	.....	Do.
Mariscana.....	F	1904	1906	91	c, s	3.2	2 to 5	Mar. 6	Mar. 25	May 15	.....	May 23	May 29	.....	Do.
Own roots:															
Lenoir.....	Gi	1905	.....	84	c, s	3.5	.....	Mar. 25	Mar. 30	May 30	June 6	June 5	June 12	Sept. 23	Sept. 24
Maryville de Malaga.....	O	1904	.....	.....	c, s	.....	.....	Mar. 23	May 10	June 1	June 16	June 18	.....	.....	.....
Lenoir.....	O	1904	1907	85	s	2.1	3 to 5	.....	.....	May 22	June 8	May 27	June 24	Sept. 24	Oct. 20
Riparia X Rupestris, No. 3309.....	O	1907	1907	92	c, s	6.3	.....	Mar. 13	Apr. 8	May 20	May 23	.....	.....	Sept. 25	.....
Solonis X Othello, No. 1613.....	F	1907	1907	87	s	2.1	3 to 5	Mar. 11	.....	May 21	May 26	June 2	.....	Sept. 20	Sept. 21

Marmota Tobread:	G1		s		Mar. 23	Apr. 10	May 29		Sept. 24
Own roots.....									
Marmota:									
Lenoir.....	F 1903	1905	S	1.5	2 to 6	Mar. 15	Apr. 3	May 24	Aug. 24
Riparia Gloire.....	F 1903	1905	S	2.2	3 to 6	Mar. 8	Apr. 1	May 23	Sept. 19
Rupestris St. George.....	F 1903	1905	C, S	2	3 to 7	Mar. 15	Mar. 28	May 23	Do.
Marsanne:									
Own roots.....	G1 1904		S		do.	do.	Mar. 27	June 4	Sept. 22
Marzerinho:	G1 1904		S		Mar. 12	Apr. 3	do.	June 5	Sept. 23
Do.....	O 1904		S	3 to 4	Mar. 23		May 9	June 15	Sept. 20
Mataro:									
Aramon X Rupestris Ganzin, No. 1.....	G1 1907	1906	S		Mar. 20	Apr. 1	May 28	June 20	do.
Dog Ridge.....	O 1903	1905	S	3.4	2 to 5	Mar. 18	May 23	June 7	Sept. 27
Herbemont.....	O 1903	1905	S	2.4	2 to 5		May 24	June 1	Sept. 28
Lenoir.....	O 1903	1905	S	1.2	3 to 5		May 23	June 4	Oct. 11
Mourvèdre X Rupestris, No. 1202.....	O 1904	1906	S	3.2	2 to 6	Mar. 22	May 24	June 6	Oct. 8
Rupestris Martin.....	O 1903	1905	S	3.1	2 to 4	Mar. 17	do.	June 5	Oct. 11
Rupestris St. George.....	O 1903	1905	S	3.3	3 to 5		May 22	June 6	Sept. 28
Salt Creek.....	O 1903	1905	S	3.7	2 to 4		May 24	June 9	Oct. 11
Taylor Narbonne.....	O 1904	1906	S	1.7	2 to 4	Mar. 20	May 23	June 16	Sept. 7
Melon:									
Dog Ridge.....	F 1903	1905	S	2.8	2 to 4	Mar. 24	do.	June 8	Sept. 27
Rupestris St. George.....	F 1903	1905	S	3.6	4 to 6	Mar. 12	Mar. 30	May 15	Sept. 20
Merlot:									
Own roots.....	G1 1904		S	2.1	4 to 5	Mar. 11	Mar. 28	May 17	Sept. 19
Meslier:									
Aramon X Rupestris Ganzin, No. 1.....	G1 1905	1905	S		do.	Mar. 15	Apr. 1	May 26	Sept. 15
Lenoir.....	O 1903	1905	S	5	2 to 3	Mar. 19	Apr. 3	May 31	do.
Rupestris St. George.....	O 1903	1905	S	4	2 to 5	Mar. 15	May 16	June 5	Sept. 25
Meunier:									
Own roots.....	G1 1905	1905	S	4.3	2 to 4	Mar. 21	May 21	May 26	Oct. 10
Dog Ridge.....	O 1904	1906	S		do.	Mar. 15	Apr. 1	May 22	Aug. 23
Lenoir.....	O 1903	1905	S	3.7	2 to 4	Mar. 20	May 10	June 5	Oct. 13
Rupestris St. George.....	O 1903	1905	C, S	3.4	3 to 5	Mar. 16	May 20	May 26	Oct. 8
Meyer No. 59:									
Dog Ridge.....	O 1904	1906	S	4.3	2 to 5	Mar. 17	do.	May 27	Sept. 15
Lenoir.....	O 1904	1906	S	2.5	2 to 5	Mar. 18	May 26	June 1	Aug. 23
Meyer, No. 60:	O 1904	1906	S	3.2	3 to 4	Mar. 20	May 23	June 12	Oct. 4
Dog Ridge.....	O 1904	1906	S	3.1	3 to 5	Mar. 23	May 26	June 7	Sept. 25
Lenoir.....	O 1904	1906	C, S	3.9	3 to 4	Mar. 20	May 25	June 2	Oct. 1
Meyer, No. 65:									
Lenoir.....	O 1904	1906	S	4.3	3 to 5	Mar. 18	May 21	June 8	Sept. 28
Meyer, No. 91:	O 1904	1906	S	4.3	3 to 5	Mar. 17	May 22	May 31	Oct. 20
Dog Ridge.....	O 1904	1906	S	5.3	3 to 4	Mar. 20	May 20	May 27	Sept. 27
Lenoir.....	O 1904	1906	S	5.3	3 to 5	Mar. 17	May 22	June 4	Sept. 26
Meyer, No. 95:	O 1904	1906	S	5.9	3 to 5	Mar. 17	May 26	June 5	Sept. 29
Dog Ridge.....	O 1904	1906	S	5.3	3 to 5	Mar. 17	May 22	June 2	Oct. 4
Lenoir.....	O 1904	1906	S	5.3	3 to 5	Mar. 17	May 22	June 4	Oct. 7

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting an resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year stock was planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Meyer, No. 103: Lenoit.....	O	1904	1906	P. cl. 88	s	Lbs. 2.4	.....	Mar. 18	.....	May 22	June 9	May 26	June 17	.....	.....
Meyer, No. 107: Lenoit.....	O	1904	1906	94	c, s	4.4	2 to 4	Mar. 16	.....	May 19	June 4	May 23	June 8	Oct. 7	Oct. 10
Meyer, No. 116: Dog Ridge.....	O	1904	1906	94	s	3.2	3 to 5	Mar. 19	.....	May 26	June 9	June 1	June 21	Sept. 26	.....
Meyer, No. 515: Dog Ridge.....	O	1904	1906	90	s	4.8	3 to 5	Mar. 21	.....	May 19	June 5	May 25	June 9	do.	.....
Millettum: Lenoit.....	O	1904	1906	85	s	2.1	3 to 4	do.	.....	May 23	do.	May 29	June 11	Sept. 29	Oct. 15
Aramon X Rupestris Ganzin, No. 1: Lenoit.....	O	1904	1907	89	s	3.3	.....	.....	.....	do.	.....	May 24	June 11	Sept. 26	Oct. 10
Riparia X Rupestris, No. 101: Riparia X Rupestris, No. 3369: Solonius X Riparia, No. 1616: Mission: Own roots.....	O	1904	1906	90	s	3.7	2 to 4	Mar. 16	.....	May 21	June 2	May 26	June 12	Sept. 26	Oct. 9
Adobe Giant.....	F	1904	1905	74	s	1.2	3 to 5	Mar. 22	.....	May 21	June 2	May 28	June 10	Sept. 28	Oct. 6
Dog Ridge.....	F	1903	1907	70	s	.9	2 to 5	Mar. 18	.....	May 20	June 1	May 26	June 13	Sept. 27	Oct. 5
Do.....	F	1903	1905	82	c, s	1.3	3 to 5	Mar. 20	.....	May 20	June 28	May 24	June 12	Sept. 28	Oct. 5
Herbemont.....	F	1903	1905	68	s	.5	3 to 4	do.	.....	May 19	May 28	May 24	June 12	Sept. 25	Oct. 5
Do.....	F	1903	1905	81	s	.....	.....	.....	.....	May 23	June 4	May 29	June 9	Sept. 15	Sept. 28
Riparia Gloire.....	F	1903	1905	83	s	4.3	3 to 4	Mar. 22	Mar. 27	May 26	May 25	May 30	June 9	Sept. 8	Sept. 20
Rupestris Mission.....	F	1903	1905	90	c, s	4	2 to 4	Mar. 11	Apr. 1	May 1	May 28	May 8	May 30	Sept. 5	Sept. 20
Do.....	F	1903	1905	92	c, s	3.8	2 to 4	Mar. 14	Mar. 30	May 15	June 8	May 29	June 14	Sept. 28	Oct. 5
Riparia Gloire.....	F	1903	1905	82	c, s	4.8	2 to 4	Mar. 13	Apr. 1	May 20	June 30	May 29	June 24	Sept. 5	Sept. 20
Rupestris St. George.....	F	1903	1905	91	s	4.1	2 to 5	Mar. 20	Apr. 1	May 22	June 10	May 28	June 24	Sept. 28	Oct. 11
Do.....	F	1903	1905	84	s	1.3	3 to 6	Mar. 9	Mar. 30	May 22	June 20	May 23	June 11	Sept. 10	Sept. 28
Riparia Gloire.....	F	1903	1905	93	s	4	2 to 4	Mar. 20	Mar. 25	May 23	June 1	May 28	June 24	Sept. 28	Oct. 11
Rupestris Mission.....	F	1903	1905	90	c, s	3.3	2 to 5	Mar. 12	Mar. 25	May 20	June 1	May 27	June 11	Sept. 27	Oct. 10
Do.....	F	1903	1905	87	c, s	2.4	2 to 4	Mar. 14	Mar. 26	May 13	June 23	May 21	June 28	Sept. 19	Sept. 20
Rupestris St. George.....	F	1903	1905	96	s	3.8	2 to 4	Mar. 21	Mar. 31	May 23	June 8	May 29	June 22	Sept. 11	Sept. 20
Do.....	F	1903	1905	95	c, s	5	3 to 7	Mar. 10	Mar. 18	May 18	June 26	May 23	June 2	Sept. 10	Sept. 19
Salt Creek.....	F	1903	1905	88	c, s	5.1	2 to 4	Mar. 21	Apr. 1	May 20	June 1	May 26	June 11	Sept. 25	Sept. 28
Do.....	F	1903	1905	95	s	2.3	2 to 5	Mar. 13	Apr. 1	May 23	June 28	May 29	June 10	Sept. 8	Sept. 20
Do.....	O	1903	1905	91	s	2.8	2 to 5	Mar. 22	Mar. 22	May 21	June 10	May 26	June 20	Sept. 26	Oct. 10

	O	1904	1907	82	S	3.2	3 to 5	Mar. 23	Mar. 30	May 19	do.	May 23	June 16	do.	Do.
Molnera Gordo:															
Lenoir:															
Mondasse:															
Ovin roots:															
Aramon X Rupestris Ganzin, No. 1:	Gl	1904	1906	93	S	4.4	3 to 6	Mar. 21	Mar. 30	May 26	June 28	May 30	June 5	Sept. 17	Sept. 24
Dog Ridge:	O	1903	1905	91	S	3.8	2 to 4	Mar. 22	Mar. 21	May 24	June 3	May 29	June 10	Sept. 10	Sept. 11
Herbement:	O	1903	1905	83	S	3.7	2 to 6	Mar. 18	Mar. 22	May 25	June 10	May 28	June 17	Sept. 27	Oct. 10
Lenoir:	O	1903	1905	93	S	4.6	2 to 5	Mar. 19	Mar. 20	do.	do.	do.	June 15	Sept. 22	Oct. 8
Mourvedre X Rupestris, No. 1202:	O	1904	1906	91	C, S	3	2 to 5	Mar. 20	Mar. 20	May 24	June 4	May 29	do.	Sept. 22	Oct. 9
Riparia X Rupestris, No. 101:	O	1904	1906	89	S	2.6	3 to 6	Mar. 17	Mar. 17	May 23	June 4	May 26	June 16	Sept. 26	Oct. 16
Riparia X Rupestris, No. 3309:	O	1903	1905	91	S	2.5	2 to 5	Mar. 20	Mar. 20	May 21	June 5	do.	June 16	Sept. 25	Oct. 11
Rupestris Martin:	O	1903	1905	92	S	4.1	3 to 5	do.	do.	do.	do.	do.	June 20	Sept. 28	Oct. 6
Rupestris St. George:	O	1903	1905	90	S	2.2	3 to 6	Mar. 17	Mar. 17	May 22	June 10	May 28	June 19	Sept. 29	Oct. 1
Salt Creek:	O	1903	1905	86	C, S	2.3	2 to 5	Mar. 17	Mar. 17	May 21	June 10	May 28	June 19	Sept. 27	Oct. 6
Solonis X Riparia, No. 1616:	O	1904	1906	87	S	4.5	2 to 6	Mar. 21	Mar. 21	May 24	June 5	May 29	June 17	Sept. 25	Oct. 5
Taylor Narbonne:	O	1904	1906	87	S									do.	Oct. 10
Monica Nero:															
Ovin roots:															
Montrastel:	Gl	1904			S			Mar. 20	Mar. 30	May 28	June 6	June 2	June 11	Aug. 29	Sept. 25
Ovin roots:															
Aramon X Rupestris Ganzin, No. 1:	Gl	1904	1906	90	S	3.3	2 to 4	Mar. 14	Apr. 1	do.	June 3	June 1	June 10	Sept. 15	Do.
Dog Ridge:	O	1904	1906	89	S	2.4	2 to 4	Mar. 19	Mar. 20	May 25	June 10	May 30	June 18	Sept. 29	Oct. 12
Herbement:	O	1904	1909	91	S	3	2 to 5	Mar. 21	Mar. 21	do.	June 5	do.	June 15	Oct. 4	Oct. 13
Lenoir:	O	1903	1909	94	S	1		Mar. 21	Mar. 21	June 2	June 8	June 5	June 26	Oct. 5	
Riparia X Rupestris, No. 101:	O	1903	1906	90	S	2.6	2 to 6	Mar. 20	Mar. 20	May 24	June 5	June 29	June 18	Sept. 24	Oct. 15
Riparia X Rupestris, No. 3309:	O	1904	1906	92	S	2.8	3 to 6	Mar. 18	Mar. 18	do.	do.	do.	June 20	Sept. 25	Oct. 11
Solonis X Riparia, No. 1616:	O	1904	1906	88	S	2.1	2 to 5	do.	do.	do.	do.	do.	June 19	Sept. 29	Oct. 10
Taylor Narbonne:	O	1904	1906	90	S	3.4	3 to 5	do.	do.	do.	June 3	do.	do.	Sept. 26	Oct. 5
Mourisco Bianca:															
Ovin roots:															
Dog Ridge:	Gl	1904	1906	93	S	3.7	2 to 5	Mar. 15	Mar. 26	do.	June 1	May 31	June 6	Sept. 18	Sept. 25
Lenoir:	O	1904	1906	93	S	3.2	3 to 5	Mar. 20	Mar. 20	May 19	do.	May 24	June 12	Sept. 30	Oct. 5
Rupestris St. George:	O	1903	1905	93	S	4.6	2 to 5	Mar. 17	Mar. 17	May 21	June 3	May 26	June 13	Sept. 28	Oct. 5
Taylor Narbonne:	O	1904	1906	93	S	2.8	2 to 4	Mar. 20	Mar. 20	May 25	June 7	May 30	do.	Sept. 25	Do.
Monisco Preto:															
Ovin roots:															
Dog Ridge:	Gl	1904	1906	95	S	6.1	2 to 4	Mar. 18	Mar. 25	May 26	June 30	May 31	June 3	Aug. 29	Sept. 20
Lenoir:	O	1904	1906	95	C, S	4.7	2 to 4	Mar. 20	Mar. 20	May 27	June 3	June 2	June 10	Sept. 25	Oct. 5
Rupestris St. George:	O	1903	1905	93	S	5.5	2 to 4	Mar. 16	Mar. 16	May 26	do.	May 30	June 15	do.	Oct. 8
Muscadelle du Bordelais:															
Adobe Gini:															
Aramon X Rupestris Ganzin, No. 1:	F	1904	1906	82	S	1	3 to 5	Mar. 13	Mar. 27	May 11	do.	May 16	May 25	Aug. 20	Sept. 20
Lenoir:	F	1904	1906	80	S	3.4	2 to 6	Mar. 6	Mar. 25	May 12	do.	May 20	May 23	Aug. 3	Do.
Mourvedre X Rupestris, No. 1202:	F	1903	1905	87	S	1.4	3 to 6	Mar. 7	Mar. 30	May 10	May 15	May 19	May 23	Aug. 5	Sept. 10
Riparia Gloire:	F	1904	1906	90	C, S	3.2	2 to 6	Mar. 18	Mar. 27	May 14	May 19	May 20	May 27	Aug. 1	Sept. 20
Riparia X Rupestris, No. 101:	F	1903	1904	88	C, S	3.2	2 to 6	Mar. 11	Mar. 25	May 17	do.	May 23	do.	Aug. 15	Sept. 4
Riparia X Rupestris, No. 3309:	F	1904	1906	88	C, S	2.4	2 to 6	Mar. 12	Mar. 28	May 10	do.	May 20	May 23	Aug. 10	Sept. 20
Rupestris St. George:	F	1904	1906	89	S	3.3	2 to 6	Mar. 12	Apr. 1	May 17	May 16	May 20	May 23	Aug. 3	Do.
Solonis X Riparia, No. 1616:	F	1903	1905	86	C, S	2.4	3 to 6	do.	Mar. 30	do.	May 15	May 15	do.	Aug. 3	Do.
Taylor Narbonne:	F	1904	1906	86	S	1.7	2 to 6	Mar. 7	Mar. 30	May 14	May 16	May 15	May 21	Aug. 1	Sept. 3
	F	1904	1905	88	S	2.3	2 to 5	Mar. 6	Mar. 25	May 12	do.	do.	May 31	Aug. 5	Sept. 20

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—(continued).

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year stock was planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
1	O	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Muscet (S. P. I. No. 3063):						Lbs.	3 to 4	Mar. 20		May 12	June 12	May 17	June 16	Oct. 10	
Own roots.....								do.		do.					
Muscet Albardens:				P. et.	S										
Own roots.....	Gi	1905			S	2.1	2 to 6	Mar. 22	Mar. 28	May 20	May 29	May 18	June 4	Aug. 27	Sept. 25
Aramon X Rupestris Gouzin, No. 1.	F	1904	1905	87	S	1.7	2 to 6	Mar. 13	Apr. 1	May 20	May 29	May 27	May 31	Aug. 20	Sept. 2
Lenoir.....	F	1903	1905	87	S	1.7	2 to 6	Mar. 13	Apr. 1	May 20	May 29	May 27	May 31	Aug. 20	Sept. 2
Mourvèdre X Rupestris, No. 1202.	F	1904	1905	92	S	4.8	2 to 6	Mar. 14	do.	May 15	May 20	May 23	May 27	Aug. 18	Sept. 15
Riparia Gloire.....	F	1903	1905	84	S	2.6	2 to 5	Mar. 20	Apr. 1	May 13	May 20	May 21	June 1	Aug. 18	Sept. 20
Riparia X Rupestris, No. 101.	F	1904	1905	87	S	2.7	2 to 5	Mar. 13	Apr. 1	May 16	May 23	May 22	May 26	Aug. 20	Sept. 19
Riparia X Rupestris, No. 3399.	F	1904	1905	91	S	5.7	2 to 5	Mar. 23	Apr. 1	May 12	May 23	May 21	do.	do.	Sept. 20
Rupestris St. George.....	F	1903	1905	92	S	4.3	3 to 5	Mar. 24	do.	May 11	May 20	do.	May 28	Aug. 8	Do.
Solonis X Riparia, No. 1616.	F	1904	1905	85	S	1.4	3 to 5	Mar. 21	Mar. 30	May 12	May 20	May 25	May 27	Aug. 18	Sept. 2
Taylor Narbonne.....	F	1904	1905	88	S	3	3 to 6	Mar. 12	do.	May 13	do.	May 24	May 26	Aug. 15	Sept. 20
Muscet Bonodi:															
Berlandieri X Riparia, No. 420A.	F	1909	1909		S	1		Mar. 22	Apr. 8	May 18	May 22	May 29	do.	Sept. 15	
De Grasset.....	F	1909	1909	80	S	2		Mar. 26		May 24	May 29	May 29	Oct. 17	Oct. 25	
Lenoir.....	O	1904	1907	79	S	1.7	2 to 5	do.	do.	May 23	June 10	May 28	June 25	Sept. 28	
Riparia X Rupestris, No. 101.	F	1907	1907	82	S	3.5	3 to 5	Mar. 24	Apr. 8	May 20	May 24	May 29	Oct. 17		
Riparia X Rupestris, No. 3309.	F	1907	1907	89	S	3.5	3 to 5	Mar. 25	Apr. 8	May 20	do.	June 2	do.	do.	
Rupestris St. George.....	F	1907	1907	87	S	3.3	2 to 5	Mar. 24	Apr. 8	May 26	May 26	June 2	do.	Sept. 15	
Solonis Robusta.....	F	1907	1907	90	S	3.3	2 to 5	Mar. 21	Apr. 5	May 16	do.	May 30	do.	Sept. 21	
Valencia.....	F	1907	1907	92	S	4	2 to 5	Mar. 23	do.	May 28	do.	May 30	do.	Oct. 17	
Muscet Capulines:															
Own roots.....	Gi	1905			S			Mar. 18	Mar. 27	May 28	May 27	May 30	do.	Sept. 10	
Dog Ridge.....	O	1904	1905	79	S	2.8	2 to 5	Mar. 26		do.	June 11	do.	June 15	Sept. 29	
Lenoir.....	O	1903	1905	85	S	2.1	2 to 4	Mar. 18		May 21	May 31	May 26	June 14	Sept. 9	Sept. 21
Rupestris St. George.....	O	1903	1905	85	S	3.4	2 to 5	do.		May 26	June 3	June 1	do.	do.	Sept. 23
Musceteller:															
Own roots.....	Gi	1905			S			Mar. 17	Mar. 28	do.	do.	June 8	Aug. 17	Sept. 20	
Dog Ridge.....	F	1903	1905	89	S	2.4	3 to 5	Mar. 8	Mar. 26	May 14	May 20	May 25	May 29	Aug. 7	Do.
Lenoir.....	F	1903	1905	87	S	1.2	3 to 6	Mar. 12	Mar. 25	May 10	May 14	May 16	May 24	Aug. 21	Sept. 10
Riparia Gloire.....	F	1903	1905	76	S	1.2	3 to 5	Mar. 10	do.	May 16	May 20	May 24	May 29	Aug. 21	Sept. 19
Rupestris St. George.....	F	1903	1905	89	S	2.3	3 to 5	Mar. 13	do.	May 8	May 13	May 14	May 24	Aug. 20	Do.

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year planted was	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
I	e	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Nasa Valentina: Own roots.....	Gi	1905	.....	.....	c, s	Lbs.	.....	Mar. 8	Mar. 30	May 25	May 30	June 1	June 3	Sept. 21	Sept. 19
Rupestris St. George.....	F	1903	1905	83	s	1.8	2 to 5	Mar. 3	Mar. 15	May 10	May 15	May 20	May 28	Aug. 25	.....
Nebbiolo:															
Own roots.....	Gi	1905	.....	.....	s	.....	.....	Mar. 15	Apr. 3	May 22	June 1	May 27	June 5	Sept. 5	Sept. 24
Dog Ridge.....	O	1904	1906	83	s	4.4	2 to 4	Mar. 20	.....	May 25	June 2	May 26	June 12	Sept. 25	Oct. 4
Lenoir.....	O	1904	1906	80	s	3.4	2 to 4	Mar. 10	.....	May 24	June 5	May 28	June 17	Oct. 4	.....
Rupestris St. George.....	O	1903	1905	84	s	2	2 to 4	Mar. 24	.....	May 20	June 3	May 26	June 15	Sept. 27	Sept. 8
Nebbiolo Bourgei:															
Dog Ridge.....	O	1904	1906	93	s	4.1	3 to 5	Mar. 17	.....	May 22	June 5	May 28	June 19	Sept. 23	Oct. 8
Lenoir.....	O	1903	1905	88	s	3.8	2 to 5	Mar. 14	.....	May 19	May 30	May 23	June 14	Sept. 25	Sept. 30
Rupestris St. George.....	O	1903	1905	88	s	4.1	2 to 4	Mar. 18	.....	May 24	May 31	May 30	June 10	Sept. 24	Oct. 2
Taylor Narbonne.....	O	1904	1907	81	s	1.6	4 to 5	Mar. 30	.....	May 19	May 28	May 24	June 9	Sept. 23	.....
Nebbiolo Fno:															
Dog Ridge.....	O	1904	1906	89	s	4	3 to 5	Mar. 18	.....	.....	June 1	May 25	June 15	.....	Oct. 4
Lenoir.....	O	1903	1905	86	s	2.8	3 to 5	Mar. 16	.....	.....	.....	May 23	June 13	Sept. 28	.....
Rupestris St. George.....	O	1903	1905	84	s	2.8	2 to 4	Mar. 20	.....	May 24	May 25	May 29	June 2	.....	Sept. 30
Taylor Narbonne.....	O	1904	1906	78	s	1.2	3 to 4	Mar. 21	.....	May 19	May 30	May 24	June 10	.....	.....
Negundo di Gattinara:															
Own roots.....	Gi	1904	.....	.....	s	.....	.....	Mar. 14	Apr. 1	May 22	.....	May 27	June 5	Sept. 16	Sept. 22
Nero Amaro:															
Own roots.....	Gi	1904	.....	.....	s	.....	.....	Mar. 20	Mar. 29	May 24	June 3	May 30	June 10	Aug. 27	Sept. 23
Nelretta di Costilla:															
Own roots.....	Gi	1904	.....	.....	c, s	.....	.....	Mar. 10	Mar. 30	May 22	May 28	May 27	June 3	Sept. 23	Sept. 25
Oeru di Boe:															
Own roots.....	Gi	1904	.....	.....	c, s	.....	.....	Mar. 17	Mar. 28	May 28	.....	.....	.....	Sept. 15	Sept. 21
Obanex:															
Lenoir.....	O	1906	1909	93	s	1.2	.....	Mar. 18	.....	June 5	June 14	June 9	June 20	.....	.....
Olivette Blanche:															
Adobe Giant.....	F	1907	1907	98	c, s	7.7	2 to 5	Mar. 21	Apr. 2	May 19	May 23	May 29	.....	Sept. 21	Oct. 10
Lenoir.....	O	1907	1907	88	s	2.8	2 to 5	Mar. 20	.....	May 20	June 8	May 26	June 20	Sept. 30	Oct. 10
Riparia X Grandes Feuilles.....	F	1907	1907	96	c, s	6.6	3 to 5	Mar. 12	Apr. 1	May 21	May 23	June 1	.....	Aug. 25	Sept. 21
Riparia X Rupestris, No. 101.....	F	1907	1907	97	c, s	6.2	3 to 5	Mar. 22	.....	May 19	May 24	May 30	.....	.....	.....

Olivetto Chaptal: Lenoir	1904 1907	83	s	2.1 8.1	2 to 5 3 to 5	Mar. 24 do.	Apr. 1 do.	May 21 do.	June 10 May 22	May 26 May 27	June 17 do.	Sept. 26 Sept. 21	Oct. 26
Solons Robusta		92	s										
Olivetto Noir: Lenoir	1904 1907	81	s	2 6.3	3 to 6 3 to 5	Mar. 26 Mar. 23	Apr. 5 do.	May 23 May 20	June 10 May 25	May 27 May 30	June 25 do.	Sept. 27 Sept. 15	Oct. 20
Mourvedre X Rupestris, No. 1292	1907	91	c, s	7.3	3 to 5	Mar. 23	do.	May 21	do.	May 30	do.	Sept. 17	
Riparia X Rupestris, No. 3309	1907	95	c, s	8.6	2 to 5	Mar. 25	do.	May 20	do.	May 31	do.	Sept. 15	
Solons X Ohello, No. 1613													
Olivetto rose: Lenoir	1907	89	s	3.1	2 to 4	Mar. 19		May 24	June 5	May 29	June 20	Sept. 27	Oct. 16
Opiman: Lenoir													
Orleans: Lenoir	1901	87	s	2.2	3 to 5	Mar. 20		May 19	do.	May 24	June 17		
Own roots													
Padadabito: Own roots	1904		c, s			do.	Mar. 26	May 26	June 3	May 31	June 8	Aug. 29	Sept. 25
Dog Ridge													
Lenoir	1906	94	s	3.6	1 to 4	Mar. 10	Mar. 27	do.	June 8	do.	June 14	Sept. 20	Do.
Rupestris St. George	1905	94	c, s	4.1	3 to 5	Mar. 16		May 26	do.	May 30	June 19	Sept. 27	Oct. 10
Taylor Narbonne	1905	94	s	3.8	3 to 5	Mar. 17		do.	do.	June 1	June 13	do.	Oct. 8
	1906	83	s	2	2 to 4	Mar. 18		May 19	do.	May 25	June 11	do.	Oct. 10
Palarusa: Own roots	1904		s										Do.
Panariti: Adobe Giant	1906	94	c, s	10.1	2 to 4	Mar. 26	Mar. 28	May 26	June 10	May 31	June 15	Sept. 20	Sept. 30
Aramon X Rupestris Ganzin, No. 1	1904	95	c, s	6.5	2 to 4	Mar. 7	do.	May 14	May 19	May 24	June 1	Aug. 3	
Dog Ridge	1905	91	s	3.2	2 to 4	Mar. 7	Mar. 27	do.	do.	do.	May 27	July 28	Aug. 1
Herbement	1903	76	s	1.7	2 to 5	do.	Mar. 30	May 12	May 18	May 26	May 28	July 25	Do.
Lenoir	1903	90	c, s	1.7	2 to 4	Mar. 8	Mar. 25	May 11	do.	May 22	May 24	July 25	
Mourvedre X Rupestris, No. 1292	1904	94	s	5.5	2 to 5	Mar. 5	Apr. 1	May 15	May 20	May 25	June 4	do.	Aug. 8
Riparia Gloire	1903	73	c, s	5.5	2 to 5	do.	do.	May 10	May 18	May 23	May 25	do.	Aug. 3
Riparia X Rupestris, No. 101	1904	94	c, s	5.6	2 to 4	Mar. 8	Mar. 27	May 12	May 20	May 21	May 25	July 25	Aug. 1
Riparia X Rupestris, No. 3309	1903	86	s	1.9	2 to 5	Mar. 11	do.	May 13	May 16	May 25	May 27	do.	Do.
Rupestris Martin	1903	90	c, s	6.1	3 to 6	Mar. 9	do.	do.	May 18	May 23	May 30	July 25	Do.
Salt Creek	1906	90	c, s	4.1	2 to 5	Mar. 7	do.	May 12	May 20	May 25	May 27	do.	Do.
Rupestris St. George	1904	92	c, s	4.8	3 to 5	do.	do.	do.	do.	do.	May 27	do.	Do.
Solons X Riparia, No. 1616	1904	92	c, s	3.4	2 to 4	do.	Mar. 28	May 13	do.	May 25	May 28	July 28	Do.
Taylor Narbonne													
Tare de Versailles: Adobe Giant	1906	93	c, s	5.5	2 to 5	Mar. 14	Mar. 25	May 12	May 23	May 22	do.	Aug. 20	Sept. 21
Aramon X Rupestris Ganzin, No. 1	1904	91	c, s	6.1	2 to 5	Mar. 6	do.	May 14	May 16	May 21	May 27	Aug. 5	Sept. 20
Dog Ridge	1906	95	s	7.3	2 to 5	Mar. 7	Mar. 30	May 12	May 25	May 24	May 30	do.	Do.
Lenoir	1903	90	c, s	3.2	2 to 5	Mar. 5	Mar. 15	May 18	May 22	May 22	May 25	Aug. 25	Sept. 19
Mourvedre X Rupestris, No. 1292	1906	81	s	1.8	3 to 5	Mar. 4	do.	May 15	May 22	June 1	June 5	do.	Sept. 20
Poney	1907	91	c, s	10.5	3 to 5	Mar. 21	do.	May 21	May 20	May 20	May 26	Sept. 21	Sept. 19
Riparia Gloire	1903	91	c, s	6.7	2 to 4	Mar. 8	Mar. 20	May 20	May 20	May 20	May 25	Aug. 5	Sept. 20
Riparia X Rupestris, No. 101	1906	84	s	1.4	3 to 5	Mar. 20	Mar. 28	do.	May 15	May 24	May 30	Aug. 10	Sept. 20
Riparia X Rupestris, No. 3309	1904	90	c, s	5.4	2 to 5	Mar. 8	Mar. 23	May 12	May 25	May 27	May 30	Oct. 17	Sept. 19
Rupestris Metallica	1907	92	s	5	3 to 6	Mar. 10	Mar. 15	May 21	May 17	May 20	May 23	Aug. 25	Sept. 20
Rupestris St. George	1903	96	c, s	7.6	4 to 5	Mar. 6	Mar. 25	May 11	May 8	May 25	May 28	Aug. 25	Sept. 19
Solons X Riparia, No. 1616	1904	84	s	2.8	4 to 5	Mar. 6	do.	do.	May 23	May 25	May 28	Aug. 25	Sept. 20
Taylor Narbonne	1906	96	c, s	6	3 to 6	Mar. 5	do.	do.	May 23	May 24	do.	Aug. 5	Do.

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California.—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Barly sea-son.	Late sea-son.	Barly sea-son.	Late sea-son.	Barly sea-son.	Late sea-son.	Barly sea-son.	Late sea-son.
1	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pedro Ximenes: Own roots.....	Gi	1904	.....	P. ct.	c, s	.....	Lbs.	Mar. 12	Mar. 28	May 22	May 30	May 29	June 6	Aug. 29	Sept. 25
Adobe Chet.....	F	1904	1906	84	c, s	.....	2 to 4	Mar. 7	Mar. 26	May 13	May 20	May 24	May 26	Sept. 15	Sept. 21
Ararat X Rupestris (anzim, No. 1).....	F	1904	1906	88	c, s	2.7	3 to 5	Mar. 5	Mar. 30	May 20	May 28	May 25	June 4	Sept. 8	Sept. 15
Doer Ridger.....	F	1903	1905	90	c, s	2.4	3 to 5	Mar. 13	Mar. 26	May 14	May 22	May 27	May 30	Sept. 20	Sept. 20
Herbmont.....	F	1903	1905	72	s	1.1	3 to 5	do.	Mar. 25	May 15	May 20	May 24	June 1	Sept. 13	Do.
Lenoir.....	F	1903	1905	88	s	9	2 to 5	do.	Mar. 27	do.	do.	do.	May 22	Sept. 15	Sept. 19
Mouvedre X Rupestris, No. 1202.....	F	1904	1906	94	c, s	3.7	3 to 6	do.	Mar. 26	May 14	do.	May 24	May 26	Sept. 10	Sept. 10
Riparia Gloire.....	F	1903	1905	89	c, s	3	2 to 5	Mar. 8	Mar. 20	May 15	May 28	May 21	May 26	Sept. 19	Sept. 20
Riparia X Rupestris, No. 101.....	F	1904	1906	94	c, s	3.8	4 to 7	Mar. 12	Mar. 26	May 14	May 20	May 22	May 26	Sept. 20	Sept. 20
Riparia X Rupestris, No. 339.....	F	1904	1906	95	c, s	3.6	3 to 5	Mar. 11	Mar. 25	May 11	do.	May 25	do.	Sept. 8	Do.
Rupestris Martin.....	F	1903	1905	84	s	1.5	2 to 5	Mar. 13	Mar. 28	May 15	May 18	May 23	May 25	Sept. 10	Sept. 16
Rupestris St. George.....	F	1903	1905	93	c, s	3.2	4 to 6	do.	Mar. 30	May 12	May 16	May 21	May 30	Sept. 8	Sept. 19
Salt Creek.....	F	1903	1905	81	s	1.3	3 to 5	Mar. 10	Mar. 20	May 15	May 24	May 28	May 28	Sept. 10	Sept. 20
Salanis X Riparia, No. 1016.....	F	1904	1906	92	c, s	2.9	3 to 5	Mar. 6	Apr. 1	do.	do.	May 23	do.	do.	Do.
Taylor Narbonne.....	F	1904	1906	90	c, s	2.2	3 to 5	Mar. 11	Mar. 25	May 14	May 20	May 23	May 27	Sept. 15	Do.
Ferle Blanche: Lenoir.....	O	1903	1905	89	s	3.4	3 to 6	.....	.....	May 20	June 5	May 26	June 20	Sept. 23	Sept. 28
Rupestris St. George.....	O	1903	1905	91	s	4.4	2 to 4	Mar. 19	.....	May 23	June 4	May 27	June 18	do.	Oct. 15
Lenoir.....	O	1904	1907	80	s	1.2	2 to 6	Mar. 21	.....	May 18	June 3	May 24	June 15	do.	do.
Ferruno: Own roots.....	Gi	1904	.....	.....	s	.....	.....	Mar. 14	Mar. 29	May 24	June 4	May 29	June 10	Sept. 10	Sept. 23
Persian, No. 21: Own roots.....	Gi	1904	.....	.....	c, s	.....	.....	Mar. 18	Mar. 30	May 30	.....	.....	.....	Sept. 20	.....
Persian, No. 25: Own roots.....	Gi	1904	.....	.....	c, s	.....	.....	Mar. 16	Mar. 25	do.	.....	.....	.....	Sept. 24	.....
Persian, No. 26: Own roots.....	Gi	1904	.....	.....	c, s	.....	.....	Mar. 20	Mar. 28	June 3	.....	.....	.....	do.	.....
Peru: Lenoir.....	O	1903	1909	92	s	3.2	3 to 4	Mar. 26	.....	June 9	June 10	June 13	June 27	Sept. 25	Oct. 8

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year stock was planted.	Year grafted.	Congenality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
I								9	10	11	12	13	14	15	16
Petit Syrah—Continued.				P. cr.	s	Lbs.	8								
Riparia × Rupestris, No. 108-103.	G	1905	1909	75	s	1.2		Mar. 2	Apr. 3	June 5				Sept. 26	
Riparia × Rupestris, No. 350.	G	1904	1909	98	s	3.2		Mar. 9	Mar. 27	May 27				Sept. 23	Oct. 8
Do.	O	1907	1909	88	s	1.5	2 to 4	Mar. 19	Mar. 1	May 30	June 2	June 15		Sept. 26	Oct. 1
Riparia × Rupestris, No. 3309.	G	1904	1909	93	s	3.7		Mar. 10	Apr. 3	May 24	June 7	June 22		Sept. 23	Oct. 11
Do.	O	1904	1909	91	s	2.7	2 to 5	Mar. 17	Mar. 17	May 28	June 1	June 9		Sept. 26	Oct. 8
Rupestris des Causses.	G	1904	1909	89	s	2.7		Mar. 8	Mar. 30	May 24	June 3	May 29		Sept. 26	Do.
Rupestris Martin.	G	1904	1909	94	s	2.6		Mar. 11	Mar. 27	May 24	June 3	May 29		Sept. 24	Oct. 13
Do.	O	1903	1905	80	s	1.5	2 to 5	Mar. 18	Mar. 18	May 29	June 5	June 20		Sept. 23	Oct. 8
Rupestris Melalca.	G	1904	1909	91	s	1.5		Mar. 6	Apr. 3	May 29	June 5	June 2		Sept. 23	Oct. 8
Do.	O	1904	1909	84	s	1.5	2 to 3	Mar. 20	Mar. 27	May 29	June 5	June 2		Sept. 26	Oct. 8
Rupestris Mission.	G	1904	1909	86	s	1.5		Mar. 9	Mar. 27	May 29	June 5	June 2		Sept. 26	Do.
Do.	O	1907	1909	88	s	3.2		Mar. 9	Apr. 1	May 29	June 5	June 2		Sept. 26	Oct. 8
Rupestris St. George.	G	1904	1909	88	s	3.2		Mar. 4	Mar. 30	May 29	June 5	June 2		Sept. 26	Do.
Do.	O	1903	1905	90	s	2.9	2 to 5	Mar. 20	Mar. 30	May 24	June 1	June 17		Sept. 27	Oct. 8
Rupestris × Portlanderi, No. 301A.	G	1904	1909	92	s	1.6		Mar. 7	Apr. 3	May 30	June 1	June 17		Sept. 23	Oct. 10
Rupestris × Portlanderi, No. 301B.	G	1904	1909	97	s	2.8		Mar. 8	Mar. 21	May 30	June 1	June 12		Sept. 26	Do.
Rupestris × Cordifolia × Rupestris.	G	1904	1909	93	s	2.8		Mar. 6	Apr. 3	May 30	June 1	June 12		Sept. 26	Do.
Do.	O	1905	1909	85	s	1.3		Mar. 4	Apr. 3	May 30	June 1	June 12		Sept. 26	Oct. 8
Rupestris × Hybrid Azemar, No. 215.	G	1904	1909	87	s	1.6		Mar. 10	Mar. 18	May 26	June 1	June 12		Sept. 20	Do.
Salé Creek.	G	1904	1909	82	s	1.4		Mar. 9	Apr. 1	May 27	June 1	June 12		Sept. 25	Do.
Do.	O	1903	1905	88	s	1.5	2 to 5	Mar. 7	Apr. 5	May 22	June 6	June 20		Sept. 26	Oct. 11
Solanis Ordinaire.	G	1904	1909	70	s	1.4		Mar. 7	Apr. 5	May 28	June 10	June 15		Sept. 26	Oct. 7
Solanis Robusta.	G	1904	1909	91	s	1.7		Mar. 8	Apr. 1	May 28	June 10	June 15		Sept. 26	Oct. 7
Do.	O	1907	1909	88	s	1.6	3 to 4	Mar. 19	Apr. 1	May 28	June 9	June 20		Sept. 25	Oct. 8
Solanis × Othello.	G	1904	1909	91	s	1.2		Mar. 21	Apr. 1	May 28	June 3	June 7		Sept. 25	Oct. 8
Solanis × Othello, No. 1613.	O	1907	1909	91	s	1.2	2 to 1	Mar. 6	Mar. 30	May 27	June 10	June 15		Sept. 25	Oct. 7
Solanis × Riparia, No. 1616.	G	1904	1909	82	s	1.4		Mar. 17	Mar. 6	May 25	June 10	June 17		Sept. 23	Oct. 9
Do.	O	1904	1906	83	s	2.5	2 to 5	Mar. 1	Apr. 2	May 28	June 8	June 17		Sept. 20	Oct. 9
Taylor Narbonne.	G	1904	1909	83	s	2.5		Mar. 1	Apr. 2	May 28	June 8	June 17		Sept. 20	Oct. 9
Do.	O	1904	1906	88	s	1.9	2 to 4	Mar. 23	Apr. 2	May 25	June 8	June 19		Sept. 26	Oct. 8

Petit Verdott:	G1	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012	3013	3014	3015	3016	3017	3018	3019	3020	3021	3022	3023	3024	3025	3026	3027	3028	3029	3030	3031	3032	3033	3034	3035	3036	3037	3038	3039	3040	3041	3042	3043	3044	3045	3046	3047	3048	3049	3050	3051	3052	3053	3054	3055	3056	3057	3058	3059	3060	3061	3062	3063	3064	3065	3066	3067	3068	3069	3070	3071	3072	3073	3074	3075	3076	3077	3078	3079	3080	3081	3082	3083	3084	3085	3086	3087	3088	3089	3090	3091	3092	3093	3094	3095	3096	3097	3098	3099	3100	3101	3102	3103	3104	3105	3106	3107	3108	3109	3110	3111	3112	3113	3114	3115	3116	3117	3118	3119	3120	3121	3122	3123	3124	3125	3126	3127	3128	3129	3130	3131	3132	3133	3134	3135	3136	3137	3138	3139	3140	3141	3142	3143	3144	3145	3146	3147	3148	3149	3150	3151	3152	3153	3154	3155	3156	3157	3158	3159	3160	3161	3162	3163	3164	3165	3166	3167	3168	3169	3170	3171	3172	3173	3174	3175	3176	3177	3178	3179	3180	3181	3182	3183	3184	3185	3186	3187	3188	3189	3190	3191	3192	3193	3194	3195	3196	3197	3198	3199	3200	3201	3202	3203	3204	3205	3206	3207	3208	3209	3210	3211	3212	3213	3214	3215	3216	3217	3218	3219	3220	3221	3222	3223	3224	3225	3226	3227	3228	3229	3230	3231	3232	3233	3234	3235	3236	3237	3238	3239	3240	3241	3242	3243	3244	3245	3246	3247	3248	3249	3250	3251	3252	3253	3254	3255	3256	3257	3258	3259	3260	3261	3262	3263	3264	3265	3266	3267	3268	3269	3270	3271	3272	3273	3274	3275	3276	3277
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TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California (Continued).

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year planted.	Year grafted.	Congeniality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
I		3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pis de Chevre des Alpes:						<i>Lbs.</i>									
Own roots.....	Gi	1904			S	3.1	.....	Mar. 15	Mar. 29	May 25	June 2	May 31	June 9	Sept. 24	Oct. 10
Dog Ridge.....	O	1904	1906	86	S	2.9	2 to 4	Mar. 23	.....	May 19	May 31	May 24	June 12	Sept. 23	Oct. 9
Lenoir.....	O	1903	1905	90	S	4.9	3 to 5	Mar. 21	.....	.....	June 8	May 23	June 24	.....	Oct. 12
Rupestris St. George.....	O	1903	1905	92	S	.....	2 to 3	Mar. 22	.....	May 24	May 31	May 3	June 12	Sept. 22	.....
Pis de Chevre Rouge:															
Lenoir.....	O	1904	1907	86	S	3.2	3 to 5	Mar. 20	.....	May 23	June 6	May 28	June 20	Sept. 20	Sept. 21
Pizzanella:															
Own roots.....	Gi	1904			C, S	4	3 to 5	Mar. 20	Mar. 28	May 30	June 1	May 5	June 7	Sept. 10	Sept. 23
Adobe Giant.....	F	1904	1906	89	C, S	.....	.....	Mar. 25	Apr. 3	May 20	May 30	May 27	June 3	.....	Sept. 20
Aramon X Rupestris Ganzin, No. 1.....	F	1904	1906	95	C, S	6.6	2 to 4	Mar. 12	Apr. 1	.....	May 29	May 26	June 3	Sept. 12	Do.
Dog Ridge.....	F	1903	1905	80	S	1.1	2 to 5	Mar. 8	Mar. 30	May 15	May 28	May 27	May 28	Sept. 16	Do.
Herbemont.....	F	1903	1905	73	S	1.1	3 to 5	Mar. 6	Mar. 25	.....	May 27	May 30	June 1	Sept. 9	Do.
Lenoir.....	F	1903	1905	91	S	2	2 to 5	.....	.....	.....	May 20	May 26	May 27	Sept. 10	Sept. 15
Mourvedre X Rupestris, No. 1202.....	F	1904	1906	87	C, S	4.9	3 to 5	Mar. 20	Apr. 1	May 14	May 28	May 23	June 4	Sept. 5	Sept. 19
Riparia X Rupestris, No. 101.....	F	1903	1905	96	C, S	7.3	2 to 6	Mar. 14	.....	May 18	May 29	May 27	June 5	Sept. 20	Sept. 20
Riparia X Rupestris, No. 3399.....	F	1904	1906	98	C, S	13.3	3 to 5	Mar. 13	Apr. 6	May 14	May 25	May 25	June 30	.....	Do.
Rupestris Martin.....	F	1903	1905	95	C, S	5.1	3 to 5	Mar. 12	Apr. 2	May 16	May 25	May 25	June 5	Sept. 8	Sept. 9
Rupestris St. George.....	F	1903	1905	95	C, S	6.5	2 to 5	Mar. 15	Apr. 1	.....	May 28	May 25	June 8	Sept. 10	Sept. 19
Salt Creek.....	F	1903	1905	86	C, S	2.5	3 to 6	Mar. 14	Apr. 1	May 21	May 23	May 25	June 5	Sept. 10	Sept. 20
Solonis X Riparia, No. 1616.....	F	1904	1906	96	C, S	5.6	2 to 5	Mar. 24	Apr. 1	May 20	May 29	May 29	June 6	Sept. 10	Do.
Taylor Narbonne.....	F	1904	1906	87	C, S	3.7	3 to 5	Mar. 14	Mar. 31	May 15	May 24	May 26	May 28	Sept. 8	Do.
Poulsard:															
Own roots.....	Gi	1904			S	.....	.....	Mar. 17	Mar. 28	May 27	.....	June 5	.....	Sept. 15	Sept. 21
Precoce de Courtiller:															
Lenoir.....	O	1903	1905	79	S	2.4	2 to 4	Mar. 18	.....	May 22	May 30	May 26	June 14	Sept. 22	Sept. 25
Rupestris St. George.....	O	1903	1907	82	S	3.4	2 to 4	Mar. 22	.....	.....	May 31	May 29	June 10	Sept. 9	Do.
Prune de Cazouls:															
Aramon X Rupestris Ganzin, No. 2.....	F	1907	1909	88	S	.....	.....	Mar. 26	.....	May 21	.....	.....	.....	Sept. 25	Sept. 25
Australis.....	F	1907	1909	90	S	.....	.....	Mar. 31	.....	May 25	.....	.....	.....	Oct. 5	Oct. 5
Berlandieri X Riparia, No. 420A.....	F	1907	1909	87	S	.....	.....	Mar. 23	.....	May 21	.....	.....	.....	Sept. 15	Sept. 15

[illegible]

Lenoir.....	1903	94	s	4.9	2 to 5	Mar. 20	.....	May 22	June 10	May 28	June 26	Sept. 28	Oct. 12
Mourvedre X Rupestris, No. 1202.....	1904	85	s	.....	.....	.....	.....	June 2	June 12	June 6	June 23	Sept. 28	Oct. 8
Rupestris St. George.....	1905	92	s	3.5	2 to 1	Mar. 17	.....	May 2	June 8	June 1	June 26	Sept. 28	Oct. 8
Solonis X Riparia, No. 1616.....	1901	91	s	2	2 to 1	Mar. 20	.....	May 27	June 1	June 2	June 15	Sept. 25	Oct. 10
Taylor Narbonne.....	1906	92	s	2.7	2 to 1	Mar. 20	.....	May 27	June 1	June 2	June 15	Sept. 25	Oct. 10
San Giovelo:													
Dog Ridge.....	1904	90	s	6	2 to 4	Mar. 21	.....	May 23	June 8	May 29	June 19	Sept. 26	
Lenoir.....	1905	91	s	2.3	2 to 4	Mar. 16	.....	May 16	June 3	May 31	June 18	.....	
Rupestris St. George.....	1903	87	c,s	4.2	3 to 4	Mar. 21	.....	May 26	June 3	May 30	June 16	Sept. 20	Sept. 26
Taylor Narbonne.....	1904	94	s	5.8	.....	Mar. 18	.....	.....	.....	June 1	June 14	.....	
Satin Blanc:													
Dog Ridge.....	1904	82	s	1.2	.....	Mar. 22	.....	May 19	.....	May 24	.....	Sept. 21	
Lenoir.....	1905	87	s	3.4	3 to 5	Mar. 17	.....	.....	May 31	May 23	June 11	Sept. 8	Sept. 20
Rupestris St. George.....	1903	86	s	3.6	3 to 4	Mar. 20	.....	May 20	June 4	May 30	June 13	Sept. 9	Do.
Sauvignon Blanc:													
Oven roots.....	1907	.....	s	.....	.....	Apr. 5	.....	May 27	June 1	May 28	June 14	Sept. 23	Oct. 10
Dog Ridge.....	1904	90	s	3.9	3 to 5	Mar. 22	.....	May 25	June 8	May 30	June 22	Sept. 23	Oct. 9
Lenoir.....	1905	92	s	3.1	3 to 5	Mar. 17	.....	May 26	June 5	June 1	June 20	Sept. 21	Oct. 1
Rupestris St. George.....	1903	91	s	3.7	2 to 4	Mar. 19	.....	May 25	June 5	June 1	June 22	Sept. 21	Oct. 1
Sauvignon Vert:													
Oven roots.....	1904	.....	c,s	4.5	3 to 6	Mar. 20	.....	May 24	June 2	May 28	June 8	Sept. 19	Sept. 20
Aramon X Rupestris Ganzin, No. 1.....	1906	85	c,s	.....	.....	Mar. 30	.....	May 23	June 8	May 29	June 20	Sept. 25	Oct. 11
Aramon X Rupestris Ganzin, No. 2.....	1909	85	s	1.8	2 to 3	Mar. 18	.....	May 30	June 2	June 7	June 12	Sept. 20	Oct. 8
Bertandier X Riparia, No. 420A.....	1907	92	s	2.4	2 to 4	Mar. 20	.....	June 3	June 3	June 8	June 16	.....	Oct. 8
Constantia.....	1909	92	s	2.4	2 to 4	Mar. 20	.....	May 30	June 3	June 8	June 16	.....	Oct. 8
Dog Ridge.....	1903	93	c,s	3.2	2 to 6	Mar. 16	.....	May 23	June 6	May 29	June 17	Sept. 25	Oct. 10
Herbmont.....	1905	85	c,s	2.6	3 to 6	Mar. 21	.....	May 25	June 10	May 30	June 21	.....	Oct. 9
Lenoir.....	1903	91	s	2.9	2 to 6	Mar. 16	.....	May 22	June 8	May 30	June 21	.....	Oct. 6
Monticola X Riparia, No. 18808.....	1907	89	s	1.7	2 to 4	.....	.....	June 3	June 5	June 7	June 19	.....	Oct. 11
Mourvedre X Rupestris, No. 1202.....	1906	95	c,s	5.4	2 to 6	Mar. 19	.....	May 26	.....	June 2	June 19	.....	Do.
Riparia X Rupestris, No. 101.....	1904	87	c,s	3	2 to 6	Mar. 20	.....	May 23	June 10	June 28	June 30	Sept. 26	Oct. 11
Riparia X Rupestris, No. 101-11.....	1907	87	s	1.2	3 to 4	.....	.....	June 2	June 8	June 8	June 24	Sept. 20	Oct. 11
Riparia X Rupestris, No. 3306.....	1909	91	s	1.9	2 to 3	Mar. 18	.....	June 3	June 5	June 10	June 20	.....	Oct. 8
Riparia X Rupestris, No. 3309.....	1904	91	c,s	4.1	3 to 6	Mar. 19	.....	May 23	.....	May 28	June 20	.....	Oct. 4
Rupestris Martin.....	1903	91	c,s	3.5	3 to 6	.....	.....	May 24	June 3	May 29	June 17	Sept. 23	Oct. 5
Rupestris St. George.....	1905	85	s	3.2	3 to 6	Mar. 17	.....	May 23	June 6	May 27	June 21	Sept. 25	Oct. 10
Salt Creek.....	1903	90	c,s	2.5	3 to 6	Mar. 16	.....	May 22	June 5	May 28	June 19	Sept. 20	Oct. 9
Solonis Robusta.....	1907	90	s	1.7	2 to 4	Mar. 18	.....	June 1	.....	June 8	June 21	.....	Oct. 11
Solonis X Otello, No. 1613.....	1909	87	c,s	2.1	2 to 3	Mar. 17	.....	.....	June 3	June 8	June 23	.....	Oct. 11
Solonis X Riparia, No. 1616.....	1906	92	c,s	3.6	3 to 6	.....	.....	May 26	June 10	June 2	June 23	Sept. 25	Oct. 9
Taylor Narbonne.....	1904	93	c,s	4.8	2 to 5	Mar. 20	.....	May 27	June 3	June 3	June 15	Sept. 24	Oct. 8
Schradzouli Blanc:													
Lenoir.....	1904	86	s	2.5	2 to 4	Mar. 18	.....	May 24	June 8	May 28	June 20	Sept. 28	Oct. 13
Schradzouli Violet:													
Lenoir.....	1904	88	s	2.8	2 to 5	.....	.....	May 26	.....	May 30	June 23	Sept. 25	Oct. 7
Semillon:													
Oven roots.....	1904	.....	c,s	.....	.....	Mar. 27	.....	May 20	May 29	May 31	June 5	Aug. 28	Sept. 24
Aramon X Rupestris Ganzin, No. 1.....	1906	88	s	2.5	2 to 5	Mar. 20	.....	May 23	June 10	May 29	June 21	Sept. 23	Oct. 11
Bertandier X Riparia, No. 420A.....	1909	83	s	.....	.....	.....	.....	May 30	June 3	June 8	June 18	Oct. 6	Oct. 11
Dog Ridge.....	1905	94	c,s	3.6	2 to 4	Mar. 19	.....	May 24	.....	May 30	June 17	Sept. 21	Oct. 8
Herbmont.....	1903	85	c,s	2.5	2 to 5	Mar. 20	.....	.....	June 7	May 29	June 20	Sept. 23	Oct. 11

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year stock was planted.	Year grafted.	Congealability.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
1															
Sylvaner:															
Own roots.....	Cl	1904			c,s	Lbs.	8	Mar. 17	Mar. 26	May 26	May 28	May 31	June 1	Aug. 28	Sept. 23
Aramon X Rupestris Ganzin, No. 1.....	O	1904	1906	95	c,s	6.4	2 to 4	Mar. 19	.....	May 19	June 8	May 24	June 20	Sept. 20	Oct. 11
Dog Ridge.....	O	1903	1905	91	c,s	3.8	2 to 5	Mar. 15	.....	May 20	June 3	.....	June 15	Sept. 22	Oct. 8
Herbemont.....	O	1903	1905	92	c,s	4.5	2 to 5	Mar. 22	.....	.....	June 2	May 25	June 13	Sept. 20	Oct. 9
Lenoir.....	O	1903	1905	93	c,s	5.9	2 to 4	Mar. 18	.....	May 19	June 2	May 24	June 16	Sept. 21	Oct. 6
Riparia X Rupestris, No. 101.....	O	1904	1906	90	c,s	2.2	1 to 4	Mar. 21	.....	.....	June 3	.....	June 15	Sept. 22	Oct. 9
Riparia X Rupestris, No. 3300.....	O	1904	1906	89	c,s	3.6	2 to 4	Mar. 17	.....	.....	June 2	.....	June 24	Sept. 20	Oct. 8
Rupestris Martin.....	O	1903	1905	86	c,s	3.1	2 to 5	Mar. 20	.....	May 23	June 2	May 28	June 19	.....	Oct. 5
Rupestris St. George.....	O	1903	1905	86	s	3.5	2 to 4	Mar. 21	.....	May 18	June 1	May 23	June 14	.....	Oct. 6
Sylvan:															
Own roots.....	Cl	1904			s			Mar. 20	Apr. 1	May 28	June 3	June 9	.....	Sept. 18	Oct. 25
Tadone:															
Dog Ridge.....	O	1904	1906	88	c,s	1.9	3 to 5	Mar. 18	.....	May 24	June 1	May 29	June 17	Sept. 30	Oct. 4
Lenoir.....	O	1903	1905	90	s	2.2	2 to 6	Mar. 15	.....	May 26	June 2	May 30	June 19	Sept. 28	Oct. 10
Rupestris St. George.....	O	1903	1905	88	s	2.8	2 to 4	Mar. 16	.....	May 24	June 3	May 29	June 18	.....	Oct. 4
Taylor Narbonne.....	O	1904	1906	84	s	1.6	2 to 6	Mar. 19	.....	May 26	June 2	June 2	June 16	Sept. 27	Oct. 4
Tannat:															
Own roots.....	Cl	1904			c,s			Mar. 15	Mar. 29	May 27	June 4	May 30	June 9	Aug. 29	Sept. 23
Dog Ridge.....	O	1904	1906	93	s	3.5	3 to 5	Mar. 26	.....	May 25	June 7	May 29	June 25	Sept. 28	Oct. 2
Lenoir.....	O	1903	1905	89	s	2.1	2 to 5	Mar. 20	.....	May 23	June 5	May 28	June 16	Sept. 20	Oct. 4
Rupestris St. George.....	O	1903	1905	89	s	4.1	3 to 6	.....	.....	.....	June 10	.....	June 25	Sept. 27	Oct. 6
Taylor Narbonne.....	O	1904	1907	74	s	1.5	2 to 4	Mar. 24	.....	May 21	June 6	May 29	June 20	Sept. 24	Oct. 8
Tanet:															
Own roots.....	Cl	1904			s			Mar. 14	Mar. 28	May 22	June 4	May 27	June 9	Sept. 15	Sept. 21
Lenoir.....	O	1904	1907	89	s	2.6	2 to 6	Mar. 24	.....	May 25	June 8	June 1	June 20	Sept. 26	Oct. 8
Riparia X Rupestris, No. 3300.....	O	1904		94	c,s	7	2 to 4	Mar. 20	.....	May 12	June 1	May 16	May 18	Oct. 1	Oct. 8
Terret Monstre:															
Adobe Giant.....	F	1907	1907	95	c,s	3.3	2 to 4	.....	Mar. 30	May 18	May 23	May 30	.....	Sept. 16	Sept. 21
Canada.....	F	1907	1907	97	s	5.1	3 to 4	Mar. 14	.....	May 15	June 1	May 29	.....	June 28	Do.
Lenoir.....	O	1904	1907	89	s	5.5	2 to 5	Mar. 25	.....	May 24	June 8	.....	June 23	Oct. 7	Oct. 7
Riparia X Rupestris, No. 101.....	F	1907	1907	95	c,s	5.5	3 to 5	Mar. 23	Apr. 1	May 20	May 21	May 31	.....	Sept. 15	Sept. 21

TABLE VII. — *Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.*

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year stock was planted.	Year grafted.	Congenality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
Trousseau:															
Ow roots.....	Gi	1904				Lbs.	8	9	10	11	12	13	14	15	16
Dog Ridge.....	O	1904	1906			4.6	1 to 5	Mar. 20	Mar. 26	May 26	May 30	May 31	June 7	Aug. 24	Sept. 20
Lenoir.....	O	1903	1905	83	c, s	4.1	2 to 4	Mar. 20	Mar. 26	May 26	June 3	June 2	June 15	Sept. 25	Oct. 8
Rupestris St. George.....	O	1903	1905	86	c, s	4.8	1 to 4	Mar. 16	Mar. 24	May 24	June 1	May 30	June 15	Sept. 24	Oct. 11
Taylor Narbonne.....	O	1904	1906	94	s	6.5	2 to 4	Mar. 21	Mar. 26	May 27	June 3	June 3	June 14	Sept. 23	Oct. 25
Unifol. Blanche d'Ambre:															
Own roots.....	Gi	1905						Mar. 20	Mar. 31	May 28	May 30	do.	do.	Sept. 15	Sept. 25
Valdame.....	O	1904	1906	92	s	4	2 to 4	Mar. 16	Mar. 18	May 27	June 3	June 2	June 15	Sept. 27	Oct. 7
Dog Ridge.....	O	1904	1906	90	s	3	3 to 4	Mar. 18	Mar. 20	May 27	June 3	June 1	June 15	Sept. 28	Oct. 11
Valdermos:															
Own roots.....	Gi	1904	1905	95	s	4.7	2 to 5	Mar. 10	Apr. 1	May 26	May 30	May 30	June 5	Aug. 29	Sept. 23
Aramon X Rupestris Gamzin, No. 1.....	O	1903	1905	84	c, s	3.9	1 to 4	Mar. 20	Mar. 25	May 21	June 4	May 27	June 15	Sept. 24	Oct. 11
Herbemont.....	O	1903	1905	85	c, s	4.4	1 to 4	Mar. 25	Mar. 26	May 24	June 5	May 29	June 20	Sept. 20	Oct. 8
Lenoir.....	O	1903	1905	85	c, s	4.7	2 to 4	Mar. 15	Mar. 18	do.	do.	do.	do.	Oct. 11	Oct. 11
Mourvedre X Rupestris, No. 1202.....	O	1904	1906	91	s	3.9	2 to 5	Mar. 20	Mar. 18	May 25	June 1	May 30	June 13	Sept. 25	Oct. 9
Riparia X Rupestris, No. 101.....	O	1904	1906	91	s	4.2	1 to 4	Mar. 18	Mar. 18	May 25	June 31	May 30	June 15	Sept. 24	Oct. 9
Riparia X Rupestris, No. 3300.....	O	1904	1906	91	s	4.2	1 to 4	Mar. 18	Mar. 18	May 25	June 31	May 26	June 15	Sept. 24	Oct. 9
Rupestris Martin.....	O	1903	1905	96	s	6.3	1 to 4	Mar. 20	Mar. 20	May 22	June 3	May 25	June 17	Sept. 21	Oct. 8
Rupestris St. George.....	O	1903	1905	97	s	5.6	2 to 4	Mar. 20	Mar. 20	May 22	June 3	May 27	June 16	Sept. 22	Oct. 11
Salt Creek.....	O	1903	1905	92	c, s	3.4	2 to 5	Mar. 18	Mar. 18	May 23	June 10	May 29	June 25	Sept. 24	Oct. 10
Solenis X Riparia, No. 1616.....	O	1904	1906	91	s	3.4	2 to 5	Mar. 18	Mar. 23	May 25	June 8	May 28	June 25	Sept. 23	Oct. 10
Taylor Narbonne.....	O	1904	1906	92	c, s	5	2 to 5	Mar. 23	Mar. 23	May 25	June 8	May 28	June 25	Sept. 23	Oct. 10
Vellner:															
Own roots.....	Gi	1904						Mar. 13	Mar. 28	May 22	May 28	May 27	June 3	Aug. 28	Sept. 20
Dog Ridge.....	O	1903	1905	92	s	3	3 to 5	Mar. 20	Mar. 24	May 24	June 1	May 26	June 16	Sept. 24	Oct. 8
Herbemont.....	O	1903	1905	88	c, s	2.7	3 to 5	Mar. 24	Mar. 24	May 20	June 5	May 26	June 17	Sept. 23	Oct. 9
Lenoir.....	O	1903	1905	90	s	3.1	2 to 4	Mar. 20	Mar. 20	May 20	June 3	May 25	June 16	Sept. 24	Oct. 8
Riparia X Rupestris, No. 3306.....	O	1907	1909	79	s	9	do.	do.	do.	do.	do.	do.	do.	do.	do.
Rupestris Martin.....	O	1903	1905	84	s	1.8	2 to 4	do.	do.	May 19	June 5	May 25	June 20	Sept. 25	Oct. 6
Rupestris St. George.....	O	1903	1905	85	s	2.1	2 to 5	Mar. 24	Mar. 24	May 20	May 31	May 27	June 10	Sept. 25	Do.
Salt Creek.....	O	1903	1905	88	s	2.4	2 to 5	Mar. 20	Mar. 20	May 19	June 1	May 25	June 16	Sept. 20	Oct. 11

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Experiment vineyard.	Year stock was planted.	Year grafted.	Congenitality.	How pruned.	Weight of pruning per vine.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
								Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.	Early sea-son.	Late sea-son.
1		3	4	5	6	7	8	9	10	11	12	13	14	15	16
White Hanepool:						Lbs.									
Adobe Giant.	F	1904	1906	P. cl.	s	1.5	3 to 5	Mar. 24	Apr. 2	May 20	May 28	May 29	June 4	Sept. 5	Sept. 12
Aramon X Rupestris Ganzin, No. 2.	F	1907	1909	88	s	1.5		Mar. 20		May 25				Oct. 16	
Australis.	F	1907	1909	88	s	3		Mar. 30		May 21				do.	
Berlandieri X Riparia, No. 420A.	F	1907	1909	88	s	3		Apr. 1		May 22				do.	
Dog Ridge.	F	1904	1906	91	s	3.8	2 to 5	Mar. 13	Apr. 6	May 18	May 30	May 29	June 8	Sept. 5	Sept. 20
Hotspur.	F	1907	1909	87	s	2.2		Mar. 20		May 21				Oct. 16	
Monticola X Rupestris.	F	1907	1909	89	s	4		Mar. 27		May 27				do.	
Mourvedre X Rupestris, No. 1212.	F	1903	1905	88	s	3.5	3 to 5	Mar. 14	Apr. 5	May 20	May 25	May 30	June 7	Sept. 8	Sept. 20
Riparia X Cordiloba X Rupestris, No. 106-8.	F	1907	1909	90	s	3.5		Mar. 24		do.				Oct. 16	
Riparia X Rupestris, No. 101.	F	1904	1906	86	s	1.3	2 to 5	Mar. 12	Apr. 2	May 15	May 31	May 25	June 7	Sept. 16	Sept. 20
Riparia X Rupestris, No. 336.	F	1907	1909	88	s	3		Mar. 30		May 22				Oct. 16	
Riparia X Rupestris, No. 336A.	F	1904	1906	92	s	4.1	2 to 5	Mar. 13	Apr. 1	May 20	May 30	May 26	June 8	Sept. 5	Sept. 20
Rupestris X Martin.	F	1907	1909	80	s			Mar. 23		May 24				Sept. 10	
Rupestris St. George.	F	1903	1905	84	s	2.9	3 to 6	Mar. 15	Apr. 5	May 21	May 27	May 29	June 6	Sept. 12	Sept. 19
Rupestris X Berlandieri, No. 219A.	F	1907	1909	82	s	2		Mar. 31		do.				Oct. 16	
Rupestris X Berlandieri, No. 219B.	F	1907	1909	89	s	2.6	3 to 6	Mar. 8	Apr. 3	May 15	May 25	May 26	May 30	Sept. 4	Sept. 20
Taylor Narbonne.	F	1904	1906	87	s	2		Mar. 24		May 24				Oct. 16	
Villa.	F	1907	1909												
White Tokay:															
Owens roots.	Gi	1904			s			Mar. 12	Mar. 28	May 22	May 30	May 27	June 5	Aug. 18	Sept. 24
Wilmut Hamburg:															
Owens roots.	O	1904			s	2.7	3 to 4	Mar. 18		May 16	May 31	May 21	June 2	Sept. 29	Sept. 25
Wilmut No. 16.	Gi	1905			c, s			Mar. 14	Mar. 28	May 27	May 28	June 2		Aug. 28	Sept. 25
Owens roots.															
Dog Ridge.	Gi	1905			c, s			Mar. 20	Mar. 31	May 15	May 26	May 29	June 12	Sept. 28	Oct. 10
Owens roots.	O	1904			c, s	2.4	3 to 6	Mar. 21		May 20	June 2	May 26	June 16	Sept. 25	Oct. 15
Lenoir.	O	1903	1905	91	s	2.8	2 to 5	Mar. 20		May 25	May 31	May 29	June 14	Sept. 25	Oct. 30
Rupestris St. George.	O	1903	1905	89	s	2.2	3 to 6	Mar. 20		May 22	do.			Sept. 25	Sept. 30
Zante.															
Owens roots.	Gi	1904			s			Mar. 22	Mar. 27	do.	May 22	do.	June 7	Sept. 5	Sept. 24

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Baillie scale.	Acid, as tartaric e. c.).	Cluster.		Berry.			Use.	
								Size.	Shape.	Compact or loose.	Size.	Shape.		Color.
	1909	1916	1911	1912	1913									
1	17	18	19	20	21	26	23	24	25	26	27	28	29	30
Ach-I-Soun: Dog Ridge..... Lenoir..... Actoni Macaroni..... Lenoir..... Monticola X Rupestris..... Mourvedre X Rupestris, No. 1202..... Solonis X Riparia, No. 1016..... Actonkny..... Lenoir..... Monticola X Rupestris..... Molloy..... Admirable..... Riparia X Rupestris, No. 3309..... Affendhaler..... Own roots..... Agadua..... Riparia X Rupestris, No. 3309..... Ahmeur bon Ahmeur..... Lenoir..... Ajaki Odia: Mourvedre X Rupestris, No. 1202..... Riparia X Rupestris, No. 101..... Rupestris Metallica..... Ajmi: Lenoir..... Aleatico: Own roots..... Dog Ridge..... Lenoir..... Rupestris St. George..... Taylor Narbonne.....						<i>P. cent.</i>		m	t	1	1	r	w	s, st
								m-1	t	1	V, 1	o	w	s, t
	2	10		3	3	21.8 .4200	0.5780 .4200	m-1	t	1	V, 1	o	w	s, t
			6			24.5	.4200	m-1	t	1	V, 1	o	w	s, t
	6	3	7	2		24.8 20	.1750 .0050	1	t	1	V, 1	o	w	s, t
	25		21	7		22.5	.7150	m	cy	m	m	r	w	s, t
	10	1½	8	19		25.4	.7125	m	t	c	1	ob	b	s, t
					5			m	cy	c	1	r	w	s, st, t
	8	8	3			21.8	.5000	1	t	c	1	o	r	s, t
			6			28.5	.6562	1	cy	m	1	o	w	t
			3	6		24.5	.5475	1	cy	m	1	o	w	t
								m	t	s	1	o	w	t
	5	3	3	25		20	.7294	1	t	c	m	r	b	t, w
	25	10	5	2	5	27	.8325	1	t	c	m	r	b	t, w
	23	10	14		29	23.5	.8900	1	t	c	m	r	b	t, w
	40	12	15	1	27½	23.5	.8156	1	t	c	m	r	b	t, w
		3				23.2	.8500	1	t	c	m	r	b	t, w

TABLE VII.—*Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.*

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Ballin ² scale.	Acid, as tartaric c. c.). per 100	Cluster.			Berry.			Use.	
	1909	1910	1911	1912	1913			Size.	Shape.	Compact or loose.	Size.	Shape.	Color.		
1	17	18	19	20	21	P. cent. 21.5	22	23	24	25	26	27	28	29	30
Alcanto Bouschet—Continued.															
Riparia X Rupestris, No. 101.	60	10	.....	25	2	.....	.....	1.0000	m	cy	c	m	r	b	w
Riparia X Rupestris, No. 101-14.	.....	.....	.....	.....	4	.....	.....	1.3237	m	cy	c	m	r	b	w
Riparia X Rupestris, No. 3306.	.....	.....	11	3	5	21	.....	.9650	m	cy	c	m	r	b	w
Riparia X Rupestris, No. 3309.	60	10	6	.....	3	23.8	.....	.8750	m	cy	c	m	r	b	w
Rupestris Martin.	60	10	8	.....	15	23	.....	.....	m	cy	c	m	r	b	w
Rupestris Metallica.	.....	.....	.....	.....	3	.....	.....	.....	m	cy	c	m	r	b	w
Rupestris Mission.	.....	.....	.....	.....	.....	.....	.....	.....	m	cy	c	m	r	b	w
Rupestris St. George.	60	15	8	8	6	22.4	.....	.9073	m	cy	c	m	r	b	w
Salt Creek.	60	6	.....	.....	4	22.5	.....	.7612	m	cy	c	m	r	b	w
Solonis Robusta.	.....	.....	.....	.....	5	.....	.....	.....	m	cy	c	m	r	b	w
Solonis X Othello, No. 1613.	.....	.....	4	.....	.....	23	.....	1.0350	m	cy	c	m	r	b	w
Solonis Riparia, No. 1616.	40	20	7	.....	5	23	.....	.8810	m	cy	c	m	r	b	w
Taylor Narbonne	50	8	9	3	7	22	.....	1.8950	m	cy	c	m	r	b	w
Almeria:															
Own roots.	.....	.....	.....	.....	.....	.....	.....	.....	l	t	c	l	o	w	s. st, t
Herbemont.	.....	25	12	.....	.....	23	.....	.7537	l	t	c	l	o	w	s. st, t
Lenoir.	20	15	.....	.....	.....	20.8	.....	.6100	l	t	c	l	o	w	s. st, t
Riparia X Rupestris, No. 101.	8	10	6	.....	3	23.5	.....	.6300	l	t	c	l	o	w	s. st, t
Riparia X Rupestris, No. 3309.	10	15	11	15	8	22.6	.....	.7650	l	t	c	l	o	w	s. st, t
Solonis X Riparia, No. 1616.	30	30	20	.....	.....	23.5	.....	.6700	l	t	c	l	o	w	s. st, t
Aneb el Cadi:															
Adobe Giant.	.....	.....	6	.....	10	25.5	.....	.7837	l	cy	m	m-l	ob	b	s. st, t
Lenoir.	10	10	9	.....	.....	20	.....	.7533	l	cy	m	m-l	ob	b	s. st, t
Monticola X Rupestris.	.....	.....	.....	.....	.....	.....	.....	.....	l	cy	m	m-l	ob	b	s. st, t
Mourvedre X Rupestris, No. 1202.	.....	.....	.....	8	.....	23	.....	.5700	l	cy	m	m-l	ob	b	s. st, t
Riparia Grand Glabre.	.....	.....	.....	12	.....	25	.....	.6150	l	cy	m	m-l	ob	b	s. st, t
Angelina:															
Adobe Giant.	.....	.....	8	.....	3	21.2	.....	.5825	v l	t	c	l	ob	r	s. st, t
Lenoir.	4	2				21.2		.3105	v l	t	c	l	ob	r	s. st, t
Mourvedre X Rupestris, No. 1202.			2			25			v l	t	c	l	ob	r	s. st, t

Aramon:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					</
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TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric (grams per 100 c. c.).	Cluster.			Berry.			Use.
								Size.	Shape.	Compact or loose.	Size.	Shape.	Color.	
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Bakator:						<i>P. cent.</i>								
Own roots.....							0.6825	1	t	c	m	r	r	t, w
Aramon X Rupestris Ganzin, No. 1.....	15	20		3	3	23	.6970	1	t	c	m	r	r	t, w
Dog Ridge.....	15	3	1½		2	21.8	.8018	1	t	c	m	r	r	t, w
Lenoir.....	15					22.2	.7875	1	t	c	m	r	r	t, w
Riparia X Rupestris, No. 101.....	25	8		1		21.4	.7585	1	t	c	m	r	r	t, w
Riparia X Rupestris, No. 3309.....	10	6	6	3		23.4	.8525	1	t	c	m	r	r	t, w
Rupestris St. George.....	20	5	1	8	5	23.2	.4950	1	t	c	m	r	r	t, w
Solonis X Riparia, No. 1616.....	10	25				21.2	.7912	1	t	c	m	r	r	t, w
Taylor Narbonne.....	20	1½	2			22.8	.8200	1	t	c	m	r	r	t, w
Barbarossa:														
Own roots.....					1	22	1.1925	m	t	c	m	r	r	t, w
Adobe Giant.....	35	25	5	25		23	.5430	m	t	c	m	r	r	t, w
Aramon X Rupestris Ganzin, No. 1.....	40		5	7	20	23	.5375	m	t	c	m	r	r	t, w
Dog Ridge.....			8	12		22.5	.6187	m	t	c	m	r	r	t, w
Do.....			2			22.6	.6575	m	t	c	m	r	r	t, w
Lenoir.....	5	3				22.5	.5418	m	t	c	m	r	r	t, w
Riparia.....	20	20	3	4	14	22.5	.6318	m	t	c	m	r	r	t, w
Riparia Gloire.....	40	15	15	3	32	24.3	.5381	m	t	c	m	r	r	t, w
Riparia X Rupestris, No. 3309.....	10	21	5	43	23	22.6	.3950	m	t	c	m	r	r	t, w
Rupestris St. George.....	30	24	25	26	8	25	.5256	m	t	c	m	r	r	t, w
Do.....	35	24	15	43	24	22.3	.6868	m	t	c	m	r	r	t, w
Solonis X Riparia, No. 1616.....	20	5	19	2	35	23.5	.4025	m	t	c	m	r	r	t, w
Taylor Narbonne.....	30	10	25		3	24.3	.6400	m	t	c	m	r	r	t, w
Barbarossa Finnebourg:														
Own roots.....	1½	1		3		26	.6300	m	t, cy	l	m-l	o	r	t, s, w
Barbera:														
Own roots.....	3	2	8			26	.6933	m	cy	c	s	ob	b	w
Dog Ridge.....						24.2	.8775	m	cy	c	s	ob	b	w
Lenoir.....	12½	1	3½			25.7	1.0440	m	cy	c	s	ob	b	w
Rupestris St. George.....	12	2	5	•	1½	22.8	.7006	m	cy	c	s	ob	b	w
Taylor Narbonne.....	10		3			25.6	1.2440	m	cy	c	s	ob	b	w

	l	cy	s	s	r	w	w
Barducci:							
Adobe Giant.....	6562	l					w
Lenoir.....	4350	l					w
Bastardo:							
Own roots.....							w
Dog Ridge.....	22.5						w
Lenoir.....	19.6						w
Rupestris St. George.....	28						w
Taylor Narbonne.....	7375						w
Beelan:							
Own roots.....							w
Dog Ridge.....	7000						w
Lenoir.....	23.9						w
Rupestris St. George.....	4 $\frac{1}{2}$						w
Taylor Narbonne.....	23.8						w
Bellino:							
Own roots.....							w
Dog Ridge.....	5418						w
Lenoir.....	6581						w
Rupestris St. George.....	8225						w
Taylor Narbonne.....	6693						w
Bonino:							
Own roots.....	6250						w
Adobe Giant.....							w
Aramon X Rupestris Ganzhu, No. 1.....							w
Dog Ridge.....							w
Do.....							w
Lenoir.....							w
Do.....							w
Mourvedre X Rupestris, No. 1202.....							w
Pomroy.....							w
Riparia X Rupestris, No. 101.....							w
Riparia X Rupestris, No. 3309.....							w
Rupestris des Cussettes.....							w
Do.....							w
Solonis X Riparia, No. 1616.....							w
Taylor Narbonne.....							w
Do.....							w
Vernorel.....							w
Bengi:							
Own roots.....							w
Bernestia Bianca.....							w
Rupestris St. George.....							w
Besson:							
Own roots.....							w
Bhokri:							
Own roots.....							w
Bienne:							
Adobe Giant.....							w
Australis.....							w
Barnes.....							w
Berlandieri X Riparia, No. 420B.....							w
Constantia.....							w
De Grasset.....							w
Dog Ridge.....							w

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric c. c.). (grams per 100	Cluster.		Berry.		Use.		
								Size.	Shape.	Compact or loose.	Size.		Shape.	Color.
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Bienne—Continued.						<i>P. cent.</i>								
Lenoir.....	11	2	3½	7	7	20	0.8735	m	r	l	l	ob	w	t, s
Monticola X Rupestris.....			4	7	4	24	.6691	m	r	l	l	ob	w	t, s
Pontroy.....					10	21.7	.8850	m	r	l	l	ob	w	t, s
Ransay.....			4		4	20.7	.5700	m	r	l	l	ob	w	t, s
Riparia Gloire.....	40	2				23	.6375	m	r	l	l	ob	w	t, s
Riparia X Rupestris, No. 3306.....						21.6	.8725	m	r	l	l	ob	w	t, s
Riparia X Rupestris, No. 3309.....				2½	2	24.3	.5298	m	r	l	l	ob	w	t, s
Rupestris des Causseles.....						22	.9562	m	r	l	l	ob	w	t, s
Rupestris St. George.....			3½			23.5	.6262	m	r	l	l	ob	w	t, s
Do.....	3	2	1			25	.2771	m	cy	c	v, s	r	b	t, r
Rupestris X Berlandieri, No. 219A.....	12	10				24.7	.5713	m	r	c	l	ob	b	t, s, w
Solonis Robusta.....		3				22.2	.4875	m	cy	c	m-l	o	b	t, s, w
Taylor Narbonne.....						19.7	.6700	m	cy	c	m-l	o	b	t, s, w
Viala.....		2	3½			21.6	.7275	m-l	t	c	l	r	b	t, s
Black Corinth.....						24	.7537	m-l	t	l	m	o	b	t, s, r
Own roots.....		4	25	12		25.1	.5375	l	t	l	m	o	b	t, s, r
Black Hamburg.....						22.3	.6262	l	t	l	m	o	b	t, s, r
Own roots.....	15	½		8		20.7	.7218	l	t	l	m	o	b	t, s, r
Black KapadJulari.....						23	.6180	l	t	l	m	o	b	t, s, r
Dog Ridge.....	30					23.7	.5725	l	t	l	m	o	b	t, s, r
Lenoir.....	30		2											
Black Morocco.....														
Own roots.....	5	20												
Black Muscat.....														
Own roots.....			½	7										
Black Prince.....														
Own roots.....	2	1		38										
Dog Ridge.....	60	8	20	3	8									
Lenoir.....	30	12	20	3	34									
Rupestris St. George.....	40	10	19	1	30									
Taylor Narbonne.....	40	2	1½	1½	1½									

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling's scale.	Acid, as tartaric c. c., per 100	Cluster.			Berry.			Use.
								Size.	Shape.	Compact or loose.	Size.	Shape.	Color.	
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Burger—Continued.						P. cent.								
Araucan X Rupestris Ganzin, No. 2.					3	17	0.9525	1	t	c	1	r	w	w
Berlandieri X Riparia, No. 420A.				4	3	21.5	.7350	1	t	c	1	r	w	w
Constantia.			3		12	21	.8025	1	t	c	1	r	w	w
Columbaud X Rupestris No. 2502.			14	6	4	20.5	.9650	1	t	c	1	r	w	w
Dog Ridge.	60	5	18	3	20	17.9	1.0175	1	t	c	1	r	w	w
Herbemont.	30	15	4	4	4	19	.7300	1	t	c	1	r	w	w
Lenoir.	20		10	3		19	1.0200	1	t	c	1	r	w	w
Monticola X Riparia, No. 1889S.						24	1.9250	1	t	c	1	r	w	w
Mourvedre X Rupestris, No. 1202.	60	10	10	5	5	22.2	.7744	1	t	c	1	r	w	w
Riparia X Rupestris, No. 101.	40	10	12	1		19	1.0050	1	t	c	1	r	w	w
Riparia X Rupestris, No. 101-14.			4			23	.8925	1	t	c	1	r	w	w
Riparia X Rupestris, No. 3306.			15	1	15	20	1.1742	1	t	c	1	r	w	w
Riparia X Rupestris, No. 3309.	60	15				18.7	.7652	1	t	c	1	r	w	w
Rupestris Martin.	50	10	12		10½	17.9	1.0294	1	t	c	1	r	w	w
Rupestris Metallica.					4			1	t	c	1	r	w	w
Rupestris Mission.								1	t	c	1	r	w	w
Rupestris St. George.	30	5	10	4		21.1	.7402	1	t	c	1	r	w	w
Salt Creek.	30	10	8	1	6	19.5	1.0108	1	t	c	1	r	w	w
Solonis Robusta.			23	2	4	21.5	.9667	1	t	c	1	r	w	w
Solonis X Othello, No. 1613.			13	10	2	22	1.1670	1	t	c	1	r	w	w
Solonis X Riparia, No. 1616.	15	15	4		5	20.5	.5756	1	t	c	1	r	w	w
Taylor Narbonne.	50	15	19	6	8	16.7	.9337	1	t	c	1	r	w	w
Cabernet Sauvignon:														
Own roots.					1	24.5	.7950	m	t	m	m	r	b	w
Araucan X Rupestris Ganzin, No. 1.	15	6	5	½		24.3	.7825	m	t	m	m	r	b	w
Dog Ridge.	30	2		17	5	23.6	.8525	m	t	m	m	r	b	w
Herbemont.	20	3	11	2	4	23	.7700	m	t	m	m	r	b	w
Lenoir.	25	8	4			21.4	.7925	m	t	m	m	r	b	w
Mourvedre X Rupestris, No. 1202.	10	4				23.2	.6562	m	t	m	m	r	b	w
Riparia X Rupestris, No. 101.	20	3				24.3	.7458	m	t	m	m	r	b	w
Riparia X Rupestris, No. 3309.	20	2	6		2	25.4	.7100	m	t	m	m	r	b	w

Rupestris Martin.....	25	2	6	1	3	22.2	.9475	m	t	m	r	b	w
Rupestris St. George.....	25	3	6	1	5	23.5	.7258	m	t	m	r	b	w
Salt Creek.....	20	5	9	2	5	23.6	.8775	m	t	m	r	b	w
Solonis X Riparia, No. 1616.....	20	12	6	2	2	25.1	.7862	m	t	m	r	b	w
Taylor Narbonne.....	25	4	9	3	3	20.6	.9225	m	t	m	r	b	w
Calabrian:													
Own roots.....		3	2				.5862	l	cy	l	r	w	t, s
Australis.....		5	3				.6175	l	cy	l	r	w	t, s
Lenoir.....		2	8	1	2		.5556	l	cy	l	r	w	t, s
Do.....		8	1	4	3		.6650	l	cy	l	r	w	t, s
Monticola X Rupestris.....				6 ¹	10		.5175	l	cy	l	r	w	t, s
Riparia Gloire.....		12	7	3	4		.5393	l	cy	l	r	w	t, s
Rupestris des Caussettes.....					17			l	cy	l	r	w	t, s
Rupestris St. George.....	10	9	15	24	8	23.6	.5531	l	cy	l	r	w	t, s
Calmette:													
Adobe Giant.....		5	3			24.2	.7225	m	t	l	r	b	w
Aramon X Rupestris Ganzin, No. 1.....		2	4			24	.7425	l	t	l	r	b	w
Do.....	40	40	9	2	15	21.6	.7775	m	t	l	r	b	w
Berlandieri X Riparia, No. 420B.....		5	6			25.2	.6625	m	t	l	r	b	w
Constantia.....								m	t	l	r	b	w
Herbement.....		10	6			21.3	.9400	l	t	l	r	b	w
Lenoir.....	20	8	6	2 ¹		22.5	.8131	l	t	l	r	b	w
Monticola X Riparia, No. 1894.....				7		28	.6367	m	t	l	r	b	w
Monticola X Riparia, No. 18815.....	4	4	13			26	.6700	m	t	l	r	b	w
Monticola X Rupestris.....		2	4			22.6	.6725	m	t	l	r	b	w
Pomroy.....								m	t	l	r	b	w
Ramsay.....								m	t	l	r	b	w
Riparia X Rupestris, No. 101.....			6	16		25	.6000	l	t	l	r	b	w
Do.....	40	30	13			23	.6450	m	t	l	r	b	w
Riparia X Rupestris, No. 3309.....						20.1	.8430	l	t	l	r	b	w
Do.....	50	20	14	28		26	.6900	m	t	l	r	b	w
Riparia X Rupestris de Jaeger.....				1	8	18.8	.8183	m	t	l	r	b	w
Rupestris X Berlandieri, No. 219A.....			4	6		26.5	.5850	m	t	l	r	b	w
Rupestris X Berlandieri, No. 301-37-152.....		6	6	13		24.7	.7408	m	t	l	r	b	w
Salt Creek.....								m	t	l	r	b	w
Solonis Robusta.....								m	t	l	r	b	w
Solonis X Othello.....		10	4	22		23	.7800	l	t	l	r	b	w
Solonis X Riparia, No. 4616.....			3 ¹			23.5	.7450	m	t	l	r	b	w
Do.....	30	15	3		3	21.1	.6350	m	t	l	r	b	w
Taylor Narbonne.....								m	t	l	r	b	w
Vermorel.....				5		28	.6450	m	t	l	r	b	w
Carlignane:													
Own roots.....		20	5	35	12	22.7	.8475	m	t	l	r	b	w
Aramon X Rupestris Ganzin, No. 1.....	60	40	15	9	15	22.7	.9075	m	t	l	r	b	w
Dog Ridge.....	60	12	20	16	28	21.7	1.0575	m	t	l	r	b	w
Herbement.....	50	10	14	5	18	22	.9015	m	t	l	r	b	w
Lenoir.....	55	20	16	12	10	20.5	.9619	m	t	l	r	b	w
Mourvedre X Rupestris, No. 1202.....				8	12	21	1.2924	m	t	l	r	b	w
Riparia X Rupestris, No. 101.....	60	10	11	5	7	22.4	.9006	m	t	l	r	b	w

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Ballin scale.	Acid, as tartaric (grams per 100 c. c.).	Cluster.				Berry.		Use.
								Size.	Shape.	Compact or loose.	Size.	Shape.	Color.	
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Carignane—Continued.						<i>P. cent.</i>								
Riparia X Rupestris, No. 3309.	50	10	13		10	21.8	1.0160	m	t	c	l	ob	b	s, w
Rupestris Martin.	50	12	10		32	20.6	1.0082	m	t	c	l	ob	b	s, w
Rupestris St. George.	60	20	16	3	18	22.3	.8620	m	t	c	l	ob	b	s, w
Salt Creek.	60	12	12	4	12	23.7	1.1437	m	t	c	l	ob	b	s, w
Solonis X Riparia, No. 1616.	50	57	9	5	5	22.2	.9000	m	t	c	l	ob	b	s, w
Taylor Narbonne.	50	20	15	8	12	21	.9884	m	t	c	l	ob	b	s, w
Castiza.								m	t	c	m	ob	r	s, t
Riparia X Rupestris, No. 3309.								m	t	c	l	ob	b	w
Calatruatto alla Porta.		1	1	1½	4	26.2	.7111	m	t	c	l	ob	b	w
Chaouch.								m	cy	c	l	ob	w	s, t
Own roots.						29.2	.4912	m	cy	c	l	ob	w	s, t
Lenoir.						23.4	.6375	m	cy	c	l	ob	w	s, t
Chaouch Rose.								m	cy	c	l	ob	w	s, t
Lenoir.	10				1	20.8	.3750	m	cy	c	l	ob	r	s, t
Charbono.								m	cy	c	l	ob	r	s, t
Own roots.								m	t	l	m	r	b	w
Dog Ridge.	5			2	2	21	.8250	m	t	l	m	r	b	w
Lenoir.	35	20				20.8	.5715	m	t	l	m	r	b	w
Rupestris St. George.	50	15				20.9	.7612	m	t	l	m	r	b	w
Riparia X Rupestris, No. 101.	40	10	9			22.6	.5325	m	t	l	m	r	b	w
Riparia X Rupestris, No. 3309.	50	8	13		4	21.7	.6881	m	t	l	m	r	b	w
Solonis X Riparia, No. 1616.	50	20	12	4	6	22.3	.7237	m	t	l	m	r	b	w
Taylor Narbonne.	35	15	11	4	5	22.5	.7108	m	t	l	m	r	b	w
Chasselas Bouches du Rhone.						21.2	.6712	m	t	l	m	r	b	w
Own roots.			1	1½		23.2	.3562	m	cy	c	m	r	w	t
Dog Ridge.	15		6½	2	6	21.2	.5493	m	cy	c	m	r	w	t
Lenoir.	30	1			10	21.2	.5400	m	cy	c	m	r	w	t
Rupestris St. George.	15	14			3	21.7	.4968	m	cy	c	m	r	w	t
Taylor Narbonne.	15			¾		21.8	.4645	m	cy	c	m	r	w	t

Chasselas Bulghery:	30	—	3	3	8	21	5518	m	cy	c	m	f
Dog Ridge.....	18	—	15	—	—	21	5587	m	cy	c	m	f
Lenoir.....	8	—	7	—	—	20.6	4981	m	cy	c	m	f
Rupestris St. George.....	2	—	1	—	1	20	4612	m	cy	c	m	f
Taylor Narbonne.....	—	—	—	—	—	—	—	—	—	—	—	W
Chasselas Cloutat:	—	—	—	—	—	—	—	—	—	—	—	W
Own roots.....	—	—	—	—	1	—	—	s	—	c	m	f
Dog Ridge.....	18	—	—	10	8	21.3	5075	s	cy	c	m	f
Lenoir.....	6	—	2	—	3	21.7	5300	s	cy	c	m	f
Rupestris St. George.....	4	—	1	—	6	22	5925	s	cy	c	m	f
Chasselas Doré:	—	—	—	—	—	—	—	—	—	—	—	W
Own roots.....	10	3	—	—	—	26	3862	m	cy	m	m	f
Dog Ridge.....	20	8	—	—	1	21.2	5350	m	cy	m	m	f
Lenoir.....	12	—	5	2	8	21.7	5681	m	cy	m	m	f
Rupestris St. George.....	8	—	4	—	—	19.9	5125	m	cy	m	m	f
Chasselas Duhamel:	—	—	—	—	—	—	—	—	—	—	—	W
Aramon X Rupestris Ganzin, No. 1.....	8	—	—	—	—	20	5325	m	cy	m	m	f
Dog Ridge.....	8	—	7	3	4	20.8	6094	m	cy	m	m	f
Lenoir.....	15	—	10	—	—	20.2	5555	m	cy	m	m	f
Rupestris St. George.....	20	—	9	—	—	21.5	5200	m	cy	m	m	f
Taylor Narbonne.....	—	—	—	—	—	20.4	5700	m	cy	m	m	f
Chasselas de Fontainebleau:	—	—	—	—	—	—	—	—	—	—	—	W
Rupestris St. George.....	21	4	1	7	15	26.4	4627	m	t	l	m	f
Chasselas Florence:	—	—	—	—	—	—	—	—	—	—	—	W
Own roots.....	4	—	—	—	—	23	3450	m	cy	m	m	f
Dog Ridge.....	12	—	2 ¹ / ₂	—	5	23.1	5475	m	cy	m	m	f
Lenoir.....	20	—	5	1	4	21.6	5075	m	cy	m	m	f
Rupestris St. George.....	5	—	—	—	7	22.7	5906	m	cy	m	m	f
Taylor Narbonne.....	2	—	—	—	3	25	3975	m	cy	m	m	f
Chasselas Montauban:	—	—	—	—	—	—	—	—	—	—	—	W
Own roots.....	—	—	—	—	—	20	—	m	cy	m	m	f
Lenoir.....	—	—	2	—	3	21.3	5775	m	cy	m	m	f
Rupestris St. George.....	10	—	14	—	—	21.7	5525	m	cy	m	m	f
Chasselas Musque Vrai:	—	—	—	—	—	—	—	—	—	—	—	W
Own roots.....	—	—	—	—	—	—	—	—	—	—	—	W
Dog Ridge.....	20	—	4	10	10	21.2	7850	s	cy	l	m	f
Lenoir.....	30	—	—	1	4	21.4	5644	s	cy	l	m	f
Rupestris St. George.....	6	—	17	¹ / ₂	2	21.8	7690	s	cy	l	m	f
Chasselas Negrepoint:	—	—	—	—	—	—	—	—	—	—	—	W
Own roots.....	3	—	—	—	—	23	3375	m	cy	c	m	f
Dog Ridge.....	10	—	5	—	2	20.8	4150	m	cy	c	m	f
Lenoir.....	20	—	7	2	4	21	4950	m	cy	c	m	f
Riparia Gloire.....	—	—	—	—	—	—	—	—	—	—	—	W
Rupestris St. George.....	8	3	10	5	2	23.6	4200	m	cy	c	m	f
Do.....	15	—	2	¹ / ₂	8	20.4	5531	m	cy	c	m	f
Taylor Narbonne.....	15	—	5	3	3	22.1	5175	m	cy	c	m	f
Chasselas Rose:	—	—	—	—	—	—	—	—	—	—	—	W
Own roots.....	2	—	4	3	—	24.4	3925	m	cy	c	m	f
Chasselas Bulghery:	—	—	—	—	—	—	—	—	—	—	—	W

TABLE VII.—*Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—(Continued).*

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric c. c.).	Cluster.			Berry.			Use.
	1909	1910	1911	1912	1913			Size.	Shape.	Compact or loose.	Size.	Shape.	Color.	
17	18	19	20	21	22			23	24	25	26	27	28		29	30
Chasselas Rose de Falloux:						<i>P. cent.</i>								
Own roots.....	2		6			21.6	0.3375	m	cy	c	m	r	w, t	
Aramon X Rupestris Ganzin, No. 1.....	25	4	4½	7	4	21.2	.6115	m	cy	c	m	r	w, t	
Do.....		4	4½	1½		20.5	.3667	m	cy	c	m	r	w, t	
Australis.....		3	3½	16		21.9	.4850	m	cy	c	m	r	w, t	
Dog Ridge.....	20		2	½		20.8	.5043	m	cy	c	m	r	w, t	
Lenoir.....	16		9	5		20.2	.5458	m	cy	c	m	r	w, t	
Mourvèdre X Rupestris, No. 1202.....	20		1	½		19.8	.5550	m	cy	c	m	r	w, t	
Riparia X Rupestris, No. 101.....	20		4	6		20.2	.4200	m	cy	c	m	r	w, t	
Do.....	20		4			20.8	.1510	s	cy	c	m	r	t, s, w	
Riparia X Rupestris, No. 3309.....								s	cy	c	m	r	t, s, w	
Do.....	30		12	4		20.6	.6243	s	cy	c	m	r	t, s, w	
Rupestris St. George.....	12	4	8	3	10	24.8	.4131	s	cy	c	m	r	t, s, w	
Do.....	20		11	4		21.2	.5700	s	cy	c	m	r	t, s, w	
Salt Creek.....								s	cy	c	m	r	t, s, w	
Solonis X Riparia, No. 1016.....	20		5	2	2½	20.8	.5412	s	cy	c	m	r	t, s, w	
Taylor Narbonne.....				4	8	17	.5400	s	cy	c	m	r	t, s, w	
Do.....	15			1	6	21.8	.5225	s	cy	c	m	r	t, s, w	
Chasselas Rose Royal:														
Aramon X Rupestris Ganzin, No. 1.....	10		3			20.3	.4870	s	cy	c	m	r	t, s, w	
Dog Ridge.....	25		4			20.6	.4125	s	cy	c	m	r	t, s, w	
Lenoir.....	25		4		3	22.3	.4350	s	cy	c	m	r	t, s, w	
Rupestris St. George.....	11		6½	2		23	.5275	s	cy	c	m	r	t, s, w	
Taylor Narbonne.....	3					21.2	.4725	s	cy	c	m	r	t, s, w	
Chasselas Rouge:														
Own roots.....	4		5	5	18	21.9	.4346	s	cy	c	m	r	t, s, w	
Lenoir.....	20		5	½	8	20.8	.4675	s	cy	c	m	r	t, s, w	
Rupestris St. George.....	15		8	3		22	.5146	s	cy	c	m	r	t, s, w	
Chasselas St. Bernard:														
Canada.....														
Lenoir.....	6					17.8	.3600	m	cy	i	m	r	w, t, s	
Riparia X Rupestris, No. 101.....								m	cy	i	m	r	w, t, s	

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric c. c.).	Cluster.		Berry.			Use.	
								Size.	Shape.	Compact or loose	Size.	Shape.		Color.
	1909	1910	1911	1912	1913									
I	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Corinthine Rose:														
Adobe Giant.....									cy	c	s	r	r	t, w
Canada.....				1½		23	0.8400	1	cy	c	s	r	r	t, w
Constantia.....					3	26.5	.9400	1	cy	c	s	r	r	t, w
Lenoir.....		2				28	.6525	1	cy	c	s	r	r	t, w
Monticola X Rupestris.....		2				26	.5475	1	cy	c	s	r	r	t, w
Mourvedre X Rupestris, No. 1202.....								1	cy	c	s	r	r	t, w
Riparia Grand Glabre.....								1	cy	c	s	r	r	t, w
Riparia X Rupestris, No. 101.....								1	cy	c	s	r	r	t, w
Vernorel.....								1	cy	c	s	r	r	t, w
Corintano:														
Australis.....		15	41			20.6	1.1058	v1	t	c	s	r	r	t, w
Barnes.....								v1	t	c	s	r	r	t, w
Lenoir.....	20	4	10	8	28	18.4	.8890	v1	t	c	s	r	r	t, w
Monticola X Rupestris.....		6	37	25		21.1	.6750	v1	t	c	s	r	r	t, w
Rupestris Martin.....		4				19.8	1.0870	v, 1	t	c	s	r	r	t, w
Rupestris St. George.....		8	10			19.6	1.2050	v, 1	t	c	s	r	r	t, w
Cornillon:														
Own roots.....		8	6	12		20	.5750	1	t	1	1	o	b	t, s
Aramon X Rupestris Ganzin, No. 1.....	40					20.2	.6325	1	t	1	1	o	b	t, s
Lenoir.....			8			21	.9375	1	t	1	1	o	b	t, s
Riparia Gloire.....								1	t	1	1	o	b	t, s
Rupestris X Bertrandier, No. 301A.....			8			20	.9575	1	t	1	1	o	b	t, s
Solais Robusta.....			8			21	.7725	1	t	1	1	o	b	t, s
Grabs Burgundy.....														
Own roots.....				4	3	22	.9186	m	cy	c	m	r	b	w
Aramon X Rupestris Ganzin, No. 1.....	45					21.4	.8017	m	cy	c	m	r	b	w
Dog Ridge.....	30	12	10	2		21.3	.8419	m	cy	c	m	r	b	w
Lenoir.....	40	10	24½			21.2	.8880	m	cy	c	m	r	b	w
Riparia X Rupestris, No. 101.....	50	8		16		21.2	.8275	m	cy	c	m	r	b	w
Riparia X Rupestris, No. 3309.....	60	5	13	5		22.4	.7665	m	cy	c	m	r	b	w
Rupestris St. George.....	30	8	17	4	31	22.6	.8055	m	cy	c	m	r	b	w
Solais X Riparia, No. 1616.....	50	20		3		19.5	.8150	m	cy	c	m	r	b	w
Taylor Narbonne.....	30	8		3	3	21.8	.6844	m	cy	c	m	r	b	w

	5	4	10	8	12	20		m	t	l	s	o	b	w
Croetto:														
Own roots.....														w
Crujidero:														t
Own roots.....	20		25	5	7	23.9		m	t	l	l	o	w	
Danague:														
Own roots.....				21										
Dog Ridge.....	5		14		1	22		m	t	l	l	r	b	t, s
Lenoir.....	35			6		24.1		m	t	l	l	r	b	t, s
Rupestris St. George.....	40		44		4	25.4		m	t	l	l	r	b	t, s
Taylor Narbonne.....						23.9		m	t	l	l	r	b	t, s
Dattier de Beyrouth:						22.6		m	t	l	l			t, s
Lenoir.....								l	cy	l	l	ob	w	t, s, r
Deacon Superb:														
Own roots.....				4		27		l	cy	c	l	ob	w	t
Diamant:														
Own roots.....				6		22		m	t	c	l	r	w	t, s
Dodrelab:														
Own roots.....	2	2		3		21.8		m	r	l	l	r	b	t, s
Aramon X Rupestris Ganzin, No. 1.....														t, s
Dog Ridge.....	60	10	11	6	2	16.7		m	r	l	l	r	b	t, s
Herbement.....		8	12		4	18.8		m	r	l	l	r	b	t, s
Lenoir.....	40	10	12	14	9	18.9		m	r	l	l	r	b	t, s
Mourvedre X Rupestris, No. 1202.....			3			18		m	r	l	l	r	b	t, s
Rupestris St. George.....	30	10	28	3	12	19.6		m	r	l	l	r	b	t, s
Solonis X Riparia, No. 1616.....			8		5	20		m	r	l	l	r	b	t, s
Taylor Narbonne.....	50	3	9			20.2		m	r	l	l	r	b	t, s
Drnekusa:														
Own roots.....				25	6	22.3		m	t	l	l	ob	b	t, s
Dronkane:														
Lenoir.....	10	2	13			22.8		v, l	l	l	l	ob	w	t, s
Rupestris des Caussettes.....				8		27		v, l	l	l	l	ob	w	t, s
Due de Margenta:														
Rupestris St. George.....	15	20	3		3	23.5		l	l	l	l	ob	w	t, s
Due de Malakoff:														
Own roots.....		1	4	7	8	24.8		l	t	m	l	r	w	t, s
Emethan:														
Dog Ridge.....								m	t	l	l	o	w	t, s, st
Lenoir.....		4	5			23		m	t	l	l	o	w	t, s, st
Emperor:														
Lenoir.....								l	t	l	l	r	b	t, s
Rupestris St. George.....								l	t	l	l	r	b	t, s
Erz Roumill:														
Etraire de l'Adhui:														
Own roots.....								m	m	c	m	ob	b	w
Fajount Jaune:														
Lenoir.....	6		5			21.2		l	cy	l	l	ob	w	t, s
Rupestris St. George.....			2	14		20		l	cy	l	l	ob	w	t, s
Faphly:														
Lenoir.....	25	10	13		15	19.7		v, l	cy	l	l	ob	r	t, s, st
Riparia X Rupestris, No. 3309.....			8			27		v, l	cy	l	l	ob	r	t, s, st
Rupestris St. George.....		2	24			26.6		v, l	cy	l	l	ob	r	t, s, st

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric (c. c.), per 100	Cluster.			Berry.			Use.
	1909	1910	1911	1912	1913			Size.	Shape.	Compact or loose.	Size.	Shape.	Color.	
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Fehér Gohér Noir: Own roots.....	15	12	10	35	.....	<i>P. cent.</i> 23	0.7406	1	cy	c	1	o	b	t, s, w
Fehér Som: Lenoir.....	10	5	6	4	12	24.5 29	.8775 .6150	1	cy	c	1	o	b	t, s, w t, s, w
Rupestris St. George.....														
Fehér Szagos: Adobe Giant.....	3	35	10	29	19	27	.5205	1	t	1	1	o	w	t, s, r
Aramon X Rupestris Ganzin, No. 1.....	40	30	8	1	20	22.1	.5745	1	t	1	1	o	w	t, s, r
Dog Ridge.....	30	25	3	20	9	24.5	.6230	1	t	1	1	o	w	t, s, r
Herbemont.....	10	4	4	3	.....	25.2	.6076	1	t	1	1	o	w	t, s, r
Lenoir.....	20	10	2	3	.....	23.1	.5300	1	t	1	1	o	w	t, s, r
Mourvedre X Rupestris, No. 1202.....	40	20	4	9	4	23.8	.5320	1	t	1	1	o	w	t, s, r
Riparia Gloire.....	20	30	8	20	5	23.6	.5260	1	t	1	1	o	w	t, s, r
Riparia X Rupestris, No. 101.....	40	40	5	15	.....	23.5	.5043	1	t	1	1	o	w	t, s, r
Riparia X Rupestris, No. 3309.....	50	20	30	31	.....	20.5	.5700	1	t	1	1	o	w	t, s, r
Rupestris Martin.....	6	.....	.....	.....	.....	26	.4575	1	t	1	1	o	w	t, s, r
Rupestris St. George.....	40	40	10 ¹	25	6	21.6	.5335	1	t	1	1	o	w	t, s, r
Salt Creek.....	15	12	6	6	0	24.1	.5081	1	t	1	1	o	w	t, s, r
Solonis X Riparia, No. 1616.....	40	3	20	28	9	21.2	.4990	1	t	1	1	o	w	t, s, r
Taylor Narbonne.....	10	15	6	28	3	27.4	.4890	1	t	1	1	o	w	t, s, r
Ferrari: Herbemont.....	25	15	.....	.....	.....	23.6	.5812	v1	1	1	1	ob	d	t, s, st
Lenoir.....	.....	12	.....	.....	.....	19	.7575	v1	1	1	1	ob	d	t, s, st
Fintendo: Own roots.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dog Ridge.....	30	5	12	6	2	23.5	.7950	m	cy	c	m	ob	b	t, s, w
Lenoir.....	25	18	8	4	27	21.9	.7665	m	cy	c	m	ob	b	t, s, w
Rupestris St. George.....	30	5	14	1½	23	22.1	.7860	m	cy	c	m	ob	b	t, s, w
Taylor Narbonne.....	35	8	9	10	10	22.4	.8175 .7175	m	cy	c	m	ob	b	t, s, w t, s, w

Flame Tokay:	1	2	3	25			t	c	l	ob	r	t, s, w
Ovn roots.....	.....	.....	24	.....	21.4	.5212	l	c	l	ob	r	t, s, w
Canada.....	.....	.....	18	.....	25	.4800	l	c	l	ob	r	t, s, w
Dog Ridge.....	30	12	14	.....	20.8	.6600	l	c	l	ob	r	t, s, w
Lenoir.....	8	.....	22	.....	21.6	.5250	l	c	l	ob	r	t, s, w
Monticola X Riparia, No. 554	.....	.....	18	.....	22	.5230	l	c	l	ob	r	t, s, w
Monticola X Riparia, No. 18804	.....	.....	18	.....	27	.7575	l	c	l	ob	r	t, s, w
Monticola X Riparia, No. 18808	.....	.....	11	.....	26	.5850	l	c	l	ob	r	t, s, w
Monticola X Riparia, No. 18185	.....	.....	11	.....	24	.4875	l	c	l	ob	r	t, s, w
Riparia X Grandes Feuilles.....	30	25	16	.....	22.1	.5450	l	c	l	ob	r	t, s, w
Riparia X Rupestris, No. 101.....	30	15	15	.....	21.9	.6225	l	c	l	ob	r	t, s, w
Riparia X Rupestris, No. 3369.....	.....	.....	.....	.....	.....	.....	l	c	l	ob	r	t, s, w
Do.....	.....	.....	8	.....	21	.4800	l	c	l	ob	r	t, s, w
Rupestris Martin.....	.....	.....	4	.....	24	.5325	l	c	l	ob	r	t, s, w
Salt Creek.....	.....	.....	13	.....	26	.5175	l	c	l	ob	r	t, s, w
Taylor Narbonne.....	.....	.....	.....	.....	.....	.....	l	c	l	ob	r	t, s, w
Folle Blanche:	20	15	.....	4	21.7	.8175	m	l	m	r	w	w
Rupestris St. George.....	.....	.....	.....	3	.....	.....	m	l	m	r	w	w
Foster:	25	.....	4	.....	26	.4612	m	c	l	r	w	t, s, w
Ovn roots.....	.....	.....	4	.....	23.5	.5119	m	c	l	r	w	t, s, w
Lenoir.....	6	10	4	7	25.4	.5335	m	c	l	r	w	t, s, w
Riparia Gloire.....	20	12	3	8	25.6	.5320	m	c	l	r	w	t, s, w
Rupestris St. George.....	.....	.....	.....	15	.....	.....	m	c	l	r	w	t, s, w
Frankenthal Precoce:	.....	.....	.....	.....	.....	.....	l	m	l	r	b	s, t, w
Herbemont.....	15	2	4	.....	24.1	.7350	l	m	l	r	b	s, t, w
Lenoir.....	.....	3	3	15	23	.6425	l	m	l	r	b	s, t, w
Monticola X Riparia, No. 18808.....	.....	.....	4	12	24.5	.6600	l	m	l	r	b	s, t, w
Monticola X Riparia, No. 18815.....	20	1	.....	.....	25.4	.6487	l	m	l	r	b	s, t, w
Rupestris St. George.....	.....	.....	.....	8	28	.7125	l	m	l	r	b	s, t, w
Solonis X Othello.....	.....	.....	4	2	20.5	.6900	l	m	l	r	b	s, t, w
Solonis X Riparia, No. 1616.....	.....	.....	.....	.....	.....	.....	l	m	l	r	b	s, t, w
-Fredericton:	.....	.....	.....	.....	.....	.....	m	l	l	ob	b	s, t
Dog Ridge.....	8	.....	7	.....	21.8	.8025	m	t	l	ob	b	s, t
Lenoir.....	.....	.....	.....	.....	.....	.....	m	t	l	ob	b	s, t
Rupestris St. George.....	.....	.....	.....	.....	.....	.....	m	cy	l	ob	b	w
Fresa de Monferat:	.....	.....	.....	.....	.....	.....	m	cy	l	ob	b	w
Ovn roots.....	.....	.....	.....	.....	26	.8925	m	cy	l	ob	b	w
Gamay de Bourgogne:	.....	.....	.....	.....	.....	.....	m	cy	l	ob	b	w
Ovn roots.....	25	.....	9 $\frac{1}{2}$	.....	23	.8025	m	cy	m	r	b	w
Dog Ridge.....	20	.....	6	.....	25.9	.9325	m	cy	m	r	b	w
Lenoir.....	15	3	.....	2	24.8	1.0762	m	cy	m	r	b	w
Rupestris St. George.....	.....	.....	.....	.....	25.7	.9712	m	cy	m	r	b	w
Gamay Teinturier:	.....	.....	.....	.....	.....	.....	m	cy	m	r	b	w
Ovn roots.....	.....	2	1	5	28	.6581	s	cy	s	r	b	w
Dog Ridge.....	50	3	.....	.....	26.6	.7912	s	cy	s	r	b	w
Lenoir.....	30	3	9	.....	24.7	.8500	s	cy	s	r	b	w
Rupestris St. George.....	50	8	12	1	26.9	.9225	s	cy	s	r	b	w
Taylor Narbonne.....	40	2	.....	.....	28.1	.7420	s	cy	s	r	b	w
Gervitz Traminer:	.....	.....	.....	.....	.....	.....	s	cy	s	r	b	w
Ovn roots.....	4	.....	1	3	21.9	.5625	s	cy	l	r	w	w

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric c. c., (grams per 100	Cluster.		Berry.			Use.	
								Size.	Shape.	Compact or loose.	Size.	Shape.		Color.
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Golden Champion:														
Own roots.....						<i>P. cent.</i>	0.8512	m	t	c	l	r	w	s, t
Do.....	8	2	2	20		25.9	.5212	m	t	c	l	r	w	s, t
Dog Ridge.....	30	3	18	4	1	25.6	.8385	m	t	c	l	r	w	s, t
Lenoir.....	60	15	4	2	18	20.5	.7240	m	t	c	l	r	w	s, t
Rupestris St. George.....	25	8	6	1	6	20.2	.8300	m	t	c				s, t
Golden Hamburg:														
Lenoir.....								m	cy	c	l	r	w	s, t
Golden Queen:														
Lenoir.....								m	t	c	l	r	w	s, t
Goolable:														
Own roots.....	40	15	6	7		23.8	.5831	m-l	l	l	l	ob	b	s, t, w
Gradska:														
Own roots.....						20.5	.8037	m-l	l	l	l	ob	w	s, t
Dog Ridge.....	40	15	12	3	3	21.1	.6036	m-l	l	l	l	ob	w	s, t
Lenoir.....	30	20	13	4	8	18.6	.6450	m-l	l	l	l	ob	w	s, t
St. George.....	20	10	19	3		22.7	.6349	m-l	l	l	l	ob	w	s, t
Taylor Narbonne.....	20	6	7			21	.6250	m-l	l	l	l	ob	w	s, t
Green Hungarian:														
Own roots.....	12	10	2	18		22.1	.5605	m-l	t	l	l	r	w	w
(Aestivalis X Monticola) X (Riparia X Rupestris, No. 554-5).														
Aramon X Rupestris Ganzin, No. 1.....	15	5	9		4	18.1	.5835	m-l	t	l	l	r	w	w
Aramon X Rupestris Ganzin, No. 2.....			3	2	2	18.8	.7375	m-l	t	l	l	r	w	w
Berlandieri X Riparia, No. 420A.....								m-l	t	l	l	r	w	w
Constantia.....					3	21	.7125	m-l	t	l	l	r	w	w
Dog Ridge.....	40	12	14	5	19	19.8	.7170	m-l	t	l	l	r	w	w
Herbemont.....	30	10	2			17.1	.6717	m-l	t	l	l	r	w	w
Lenoir.....	40	8	6	4	8	20.8	.7460	m-l	t	l	l	r	w	w
Monticola X Riparia, No. 18808.....					3	22	.7945	m-l	t	l	l	r	w	w
Mourvedre X Rupestris, No. 1202.....	30	3	4	2	4	20.6	.5626	m-l	t	l	l	r	w	w

Riparia × Rupestris, No. 101.	40	5	8	1	18	20.6	.7185	m-l	t	l	l	r	w	w
Riparia × Rupestris, No. 3306.			3		5	19.5	.7725	m-l	t	l	l	r	w	w
Riparia × Rupestris, No. 3309.		10			5	21.3	.7325	m-l	t	l	l	r	w	w
Rupestris Martin.								m-l	t	l	l	r	w	w
Rupestris Mission.								m-l	t	l	l	r	w	w
Rupestris St. George.	30	4	4	4	4	22	.8100	m-l	t	l	l	r	w	w
Salt Creek.		12			2	19	.7435	m-l	t	l	l	r	w	w
Solonis Robusta.					4	20.4	.6470	m-l	t	l	l	r	w	w
Solonis × Othello, No. 1613.						21.5	.8212	m-l	t	l	l	r	w	w
Solonis × Riparia, No. 1616.	25	10	8		5	21	.8137	m-l	t	l	l	r	w	w
Taylor Narbonne.	50	10	11	4	4	17.8	.7575	m-l	t	l	l	r	w	w
Grenache:						19.6	.7290	m-l	t	l	l	r	w	w
Ovn roots.	10	30	20	32	30	24	.7245	m-l	t	c	m	ob	t, w	t, w
Dog Ridge.	40	12	15	2		22.5	.8794	m-l	t	c	m	ob	t, w	t, w
Lenoir.	50	15	18	11	36	22.8	.7800	m-l	t	c	m	ob	t, w	t, w
Rupestris St. George.	40	3	4	3	23	24	.9075	m-l	t	c	m	ob	t, w	t, w
Taylor Narbonne.	50	5	11		2	24.8	.7170	m-l	t	c	m	ob	t, w	t, w
Gros Blanc de Lausanne:								m	t	c	m	ob	w	w
Lenoir.	20	8	11		17	22.2	.5250	m	t	c	m	ob	w	w
Solonis × Othello.		2				23.3	.4950	m	t	c	m	ob	w	w
Gros Guillaume:								m	r	c	l	r	t, s	t, s
Gros Manzano:					1½	28	.5250	m	cy	l	m	r	w	w
Lenoir.	½		3	8		25.6	.5091	m	cy	l	m	r	w	w
Gros Maroc:								m	t	c	l	ob	s, t, st.	s, t, st.
Ovn roots.								m	t	c	l	ob	s, t, st.	s, t, st.
Gros Verdor:								m	cy	c	l	r	w	w
Ovn roots.	35	20		35½	12	21	.9000	m	cy	c	l	r	w	w
Dog Ridge.	20	3	5			23.5	.8118	m	cy	c	l	r	w	w
Do.	40	15	12		31	23.1	1.0075	m	cy	c	l	r	w	w
Lenoir.	12	12		4	2	20.7	.7181	m	cy	c	l	r	w	w
Do.	25	15		20	15	24.1	.5962	m	cy	c	l	r	w	w
Rupestris St. George.	30	10	14	6	38	23.8	.8081	m	cy	c	l	r	w	w
Do.	20	3	9			22.5	.8445	m	cy	c	l	r	w	w
Taylor Narbonne.						22	.7108	m	cy	c	l	r	w	w
Hebron:								m	t	l	m	r	w	w
Lenoir.	3	5	8			22.3	.5895	m-l	t	l	m	r	w	w
Rupestris St. George.				2		21	.7873	m-l	t	l	m	r	w	w
Solonis × Othello, No. 1613.				1½		20	.7300	m-l	t	l	m	r	w	w
Huasco:								m	t	l	l	o	s, t, r	s, t, r
Ovn roots.	15	6	2	4		26	.6196	m	t	l	l	o	s, t, r	s, t, r
Aramon × Rupestris Ganzin, No. 1.		10	5	3	2	26	.3265	m	t	l	l	o	s, t, r	s, t, r
Do.			10			22	.6450	m	t	l	l	o	s, t, r	s, t, r
Aramon × Rupestris Ganzin, No. 2.						28	.5550	m	t	l	l	o	s, t, r	s, t, r
Australis.			4			25	.5850	m	t	l	l	o	s, t, r	s, t, r
Berlandieri × Riparia, No. 420A.			3	5		29.5	.4625	m	t	l	l	o	s, t, r	s, t, r
Lenoir.	10	8	3	½		26.5	.6277	m	t	l	l	o	s, t, r	s, t, r
Monticola × Riparia, No. 18808.				4		30	.6150	m	t	l	l	o	s, t, r	s, t, r
Mourvedre × Rupestris, No. 1202.			3	19	3	26	.5415	m	t	l	l	o	s, t, r	s, t, r
Riparia Gloire.	15	6	3	12	1	26	.5975	m	t	l	l	o	s, t, r	s, t, r
Riparia × (Cordiolia × Rupestris, No. 106-8).			6			25.5	.5025	m	t	l	l	o	s, t, r	s, t, r

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric c. c., per 100	Cluster.			Berry.			Use.
	1909	1910	1911	1912	1913			Size.	Shape.	Compact or loose.	Size.	Shape.	Color.	
I	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Huasco—Continued.						<i>P. cent.</i>								
Riparia X Rupestris, No. 101.....	4	2	1	2	.....	20.9	0.5717	m	t	l	l	o	w	s, t, r
Do.....			3	2	.....	26.3	.6225	m	t	l	l	o	w	s, t, r
Riparia X Rupestris, No. 3309.....	15	11	5	8	4	27	.6000	m	t	l	l	o	w	s, t, r
Rupestris St. George.....				5	.....	29	.5500	m	t	l	l	o	w	s, t, r
Solonis Robusta.....					.....	28	.4950	m	t	l	l	o	w	s, t, r
Solonis X Riparia, No. 1616.....					.....	27.2	.6750	m	t	l	l	o	w	s, t, r
Taylor Narbonne.....		5		8	.....	27	.5100	m	t	l	l	o	w	s, t, r
Viala.....					.....									
Hunisa:														
Adobe Giant.....			2		.....	28	.5175	l	cy	l	l	o	b	s, t, st
Australis.....			12	35	.....	20	.7725	l	cy	l	l	o	b	s, t, st
Berlandieri X Riparia, No. 420A.....				15	.....			l	cy	l	l	o	b	s, t, st
Constantia.....			12	22	.....	21	.5325	l	cy	l	l	o	b	s, t, st
Dog Ridge.....					.....			l	cy	l	l	o	b	s, t, st
Riparia X Rupestris, No. 3309.....					.....			l	cy	l	l	o	b	s, t, st
Solonis Robusta.....					.....			l	cy	l	l	o	b	s, t, st
Solonis X Riparia, No. 1616.....			14	12	.....	21	.5775	l	cy	l	l	o	b	s, t, st
Hunisa (S. P. I. No. 6124):														
Own roots.....					.....			l	cy	l	l	o	b	s, t, st
Hunisa (S. P. I. No. 8583):					.....			l	cy	l	l	o	b	s, t, st
Own roots.....	10				.....	18.2	1.0125	l	cy	l	l	o	b	s, t, st
Hutab:														
Own roots.....					2	22	.5850	m	l	l	m	o	w	t
Hycalcs:														
Lenoir.....					.....			l	t	l	m	r	w	s, t, w
Rupestris Mission.....		10	13		.....	22	.6850	l	t	l	m	r	w	s, t, w
Rupestris St. George.....		2	19		.....	23	.4815	l	t	l	m	r	w	s, t, w
Solonis X Othello, No. 1613.....			9	12	.....	25.2	.4762	l	t	l	m	r	w	s, t, w
Imperial:														
Own roots.....				8	5	20.5	.6442	m	t	c	m-l	r	b	t, s, w

Inzolia Bianca:	8	5 1½	5 10	2	23.1 23	.6267 .6950	m-l m-l	t t	c c	m m	ob ob	w w	t, w t, w
Lenoir.....	2	4	15	3	25.2	.6502	s	cy	c	s	r	w	w
Rupestris St. George.....	11½	1	2	2	26.5	.6555	m	cy	c	s	r	r	t, w
Johannisberger.....	12	3	28	6	27.7	.6400	m	cy	c	s	r	r	t, w
Own roots.....	16	3	20	4	28.8	.7695	m	cy	c	s	r	r	t, w
Jura Muscat:	30				17.6	.6712	m	t	c	m-l	ob	w	t, s
Lenoir.....	2	35	8	20	22.7	.5850	l	cy	c	s	r	b	w
Riparia Gloire.....	40	30	10	25	23.4	.6644	l	cy	c	s	r	b	w
Kadarka:	15	30	4	22	23.7	.4950	l	cy	c	s	r	b	w
Dog Ridge.....	8	13	5	18	23.9	.5365	l	cy	c	s	r	b	w
Riparia Gloire.....	20	40	10	36	24.8	.4305	l	cy	c	s	r	b	w
Rupestris St. George.....	2	2½			24.1	.7425	l	t	l	m	o	w	t, F, w
Keilmish-Ally-Blanc:							l	t	l	m	o	w	t, F, w
Solonis X Othello, No. 1613.....	20	5	11	4	24	.7652	l	t	l	m	o	w	w
Keropodia:							l	t	l	m	o	w	w
Riparia X Rupestris, No. 3309.....	20	3	5	35	21.4	.5796	l	t	c	l	r	b	s, t, w
Key:	4	2	1	½	24.9	.6262	s	cy	c	s	r	w	w
Herbemont:	3	1	10	4	25.3	.6510	m	cy	l	l	r	b	w
Lenoir.....	15	1½	10		23	.8717	m	cy	l	l	r	b	w
Klemburger:	15	8	9½	4	22.4	.7765	m	cy	l	l	r	b	w
Own roots.....	45	7	12	1	21.2	.9210	m	cy	l	l	r	b	w
Köber:	15	2			24.3	.4395	m	cy	l	l	r	b	w
Own roots.....		3	6		22.1	.5550	m	t	l	l	ob	r	s, t
Kurteleaska:					21.2	.5250	l	cy	l	m	ob	w	w
Do.....	50		½	4	20.3	.7050	l	cy	l	m	ob	w	w
Lahntraube:	15	7	½		23.3	.7037	m-l	l	l	l	ob	w	w, s, t
Own roots.....	15	8	1	12	26	.6944	m-l	l	l	l	ob	w	w, s, t
Riparia Gloire.....	30	10	8	6	24.3	.7350	m-l	l	l	l	ob	w	w, s, t
Rupestris St. George.....				3								w	w
Leani Zolo:	30	40	8	30	22.3	.5130	m	cy	c	s	r	w	w
Rupestris St. George.....				18								w	w
Lignan Blanc:					27.5	.8175	s	cy	c	s	r	w	w
Own roots.....	40	30	5	3	22.3	.6094	s	cy	c	s	r	w	w
Aramon X Rupestris Ganzin, No. 1.....	10	6		43	22.6	.6187	s	cy	c	s	r	w	w
Dog Ridge.....	42	35	14	47	22.6	.6388	s	cy	c	s	r	w	w

TABLE VIII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric c. c.). (grams per 100	Cluster.		Berry.		Use.		
	1909	1910	1911	1912	1913			Size.	Shape.	Compact or loose.	Size.		Shape.	Color.
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Lignon Blanc—Continued.						P. cent.								
Hotporup.....		6				24.1	.6175	S	cy	c	S	I	W	W
Lenoir.....	25	5	3	11½	5	23.2	.6660	S	cy	c	S	I	W	W
Do.....	28	10	2	2	4	21.3	.6990	S	cy	c	S	I	W	W
Mourvedre X Rupestris, No. 1202.														
Do.....	25	30	3	41	8	22.3	.6315	S	cy	c	S	I	W	W
Riparia Gloire.....	8	35	8	40	11	24.8	.6615	S	cy	c	S	I	W	W
Riparia X Rupestris, No. 101.	30	30	20	6	0	22.9	.0276	S	cy	c	S	I	W	W
Riparia X Rupestris, No. 3309.	20	50	25	13	4	23	.6135	S	cy	c	S	I	W	W
Rupestris St. George.	40	10	10		10½	22.8	.0950	S	cy	c	S	I	W	W
Do.....	40	30	5	18	26	22.4	.6185	S	cy	c	S	I	W	W
Solonis X Othello.		4				23	1.0462	S	cy	c	S	I	W	W
Solonis X Riparia, No. 1616.	10	20	15	12	0	24	.5174	S	cy	c	S	I	W	W
Solonis X Narbonne.	6	40	10	23	0	22.4	.5681	S	cy	c	S	I	W	W
Do.....	50	5	3			24.2	.6150	S	cy	c	S	I	W	W
Listan:														
Own roots.	10	10	15	21	8	23.6	.5090	I	I	I	m	I	W	W, S, t
(Aestivalis X Monticola) X (Riparia X Rupestris, No. 554-5).														
Aramon X Rupestris Ganzin, No. 1.			6	1	6	23	.6300	I	I	c	m	I	W	W, S, t
Aramon X Rupestris Ganzin, No. 2.	40	40	26		8	23.3	.5806	I	I	c	m	I	W	W, S, t
Berlandieri X Riparia, No. 4203.			3		2	24.5	.6187	I	I	c	m	I	W	W, S, t
Columband X Riparia, No. 2502.	5					23.7	.4800	I	I	c	m	I	W	W, S, t
Constantia.				3		22	.5025	I	I	c	m	I	W	W, S, t
Cornucopia.			4	2	8	23.8	.6375	I	I	c	m	I	W	W, S, t
Do.....		4	4			23.3	.3475	I	I	c	m	I	W	W, S, t
De Grasset.		6				25.6	.4950	I	I	c	m	I	W	W, S, t
Dog Ridge.	30	10	17	8		23.3	.6375	I	I	c	m	I	W	W, S, t
Herbement.	15	12	2			22.3	.5344	I	I	c	m	I	W	W, S, t
Lenoir.	6	5	9		5	23.1	.5450	I	I	c	m	I	W	W, S, t
Monticola X Riparia, No. 18804.			1½			23.7	.4495	I	I	c	m	I	W	W, S, t
Monticola X Riparia, No. 18808.				26		24.5	.6070	I	I	c	m	I	W	W, S, t
Mourvedre X Rupestris, No. 1202.	30	10	13	2	15	22.9	.6530	I	I	c	m	I	W	W, S, t

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Baling scale.	Acid, as tartaric c. c.), per 100	Cluster.			Berry.			Use.
								Size.	Shape.	Compact or loose.	Size.	Shape.	Color.	
	1909	1910	1911	1912	1913									
I	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Malaga—Continued.						<i>P. cent.</i>								
Dog Ridge.....	60	40	10	20	32	23.1	0.6150	1	t	m	1	ob	w	s, t, r
Herbement.....	2	20	2	.....	.....	24.8	.0083	1	t	m	1	ob	w	s, t, r
Lenoir.....	30	20	20	4	2	22.8	.4392	1	t	m	1	ob	w	s, t, r
Mourvedre X Rupestris, No. 1202.....	45	30	15	45	12	22.9	.5950	1	t	m	1	ob	w	s, t, r
Riparia Gloire.....	50	25	15	44	18	22.7	.6489	1	t	m	1	ob	w	s, t, r
Riparia X Rupestris, No. 101.....	40	70	20	43	10	23.6	.6120	1	t	m	1	ob	w	s, t, r
Riparia X Rupestris, No. 3309.....	40	30	20	22	18	23.7	.5995	1	t	m	1	ob	w	s, t, r
Rupestris Martin.....	11	7	11 ²	.....	.....	22.5	.4790	1	t	m	1	ob	w	s, t, r
Rupestris St. George.....	40	30	15	30	20	22.9	.5715	1	t	m	1	ob	w	s, t, r
Salt Creek.....	30	15	5	31	8	22.8	.6165	1	t	m	1	ob	w	s, t, r
Solonis X Riparia, No. 1616.....	50	70	35	.....	.....	22.7	.6006	1	t	m	1	ob	w	s, t, r
Taylor Narbonne.....	60	60	15	33	4	23.9	.5600	1	t	m	1	ob	w	s, t, r
Malaga Blanc:														
Lenoir.....	15	18	3	.....	.....	26.9	.5425	m-l	l	l	m	ob	w	w
Riparia Gloire.....	4	15	1	7	4	25.3	.5790	m-l	l	l	m	ob	w	w
Rupestris St. George.....	15	25	4	30	26	26.5	.5720	m-l	cy	c	s	r	b	w
Malbeck:														
Own roots.....	.....	2	2	22	3	24	.8025	s	t	c	1	ob	b	s, t, w
Malvasia:														
Own roots.....	.....	6	2	27	.....	26	.5556	s	t	c	1	ob	b	s, t, w
Lenoir.....	.....	.....	.....	.....	.....	.....	.....	s	t	c	1	ob	b	s, t, w
Rupestris St. George.....	.....	.....	.....	.....	.....	24	.9375	s	t	c	1	ob	b	s, t, w
Malvasia de Broglio:														
Own roots.....	.....	.....	.....	15	.....	23.1	.6375	l	t	1	m	r	w	w
Malvasia Rosaria:														
Own roots.....	15	8	2	12	.....	24.5	.7162	l	t	c	1	ob	b	w
Dog Ridge.....	40	50	5	40	0	23.4	.7125	l	t	c	1	ob	b	w
Herbement.....	.....	.....	41	.....	.....	21	.8625	l	t	c	1	ob	b	w
Lenoir.....	25	15	.....	6	.....	24.3	.6354	l	t	c	1	ob	b	w
Riparia Gloire.....	30	40	5	20	26	22.4	.6495	l	t	c	1	ob	b	w
Rupestris St. George.....	25	25	10	10	0	24.1	.6469	l	t	c	1	ob	b	w

	10	20	10	3	3	25	6862	l	t	c	l	ob	b	w
Malaysia Royasenda:														
Own roots.														
Mamelon.														
Own roots.														
Dog Ridge.														
Lenoir.	4	8	24	6	6	21	7200	l	t	c	l	ob	w	s, t
Rupestris St. George.	20	12		4		25.2	6787	l	t		l	ob	w	s, t
Taylor Narbonne	15	10				24.1	6360	l	t	c	l	ob	w	s, t
Valencia.	15	8	10			21.3	6300	l	t	c	l	ob	w	s, t
Mantio de Pitas:														
Own roots.														
Adobo Giant.	20	20	15	21	10	22.2	5715	l	t	l	m	ob	w	s, t
Aramon X Rupestris Ganzin, No. 1	20	40	15	30	16	22.1	4980	l	t	l	m	ob	w	s, t
Dog Ridge.	45	50	18	28	20	22.7	3963	l	t	l	m	ob	w	s, t
Herbmon.	25	30	15	26	3	21.5	3600	l	t	l	m	ob	w	s, t
Lenoir.	3	30	15		1	21.5	3600	l	t	l	m	ob	w	s, t
Do.	40	30	3	22	3	21.3	3255	l	t	l	m	ob	w	s, t
Mourvedre X Rupestris, No. 1202	12	13	6	13	23	21.6	3565	l	t	l	m	ob	w	s, t
Riparia Gloire.	45	45	5	13	18	22.2	4410	l	t	l	m	ob	w	s, t
Riparia X Rupestris, No. 101.	20	40	15	28	18	23.6	3200	l	t	l	m	ob	w	s, t
Riparia X Rupestris, No. 3309.	30	50	15	12	6	23.6	3870	l	t	l	m	ob	w	s, t
Rupestris Martin.	45	50	20	13	13	23.1	4525	l	t	l	m	ob	w	s, t
Rupestris St. George.	10	6	12	1	2	22.5	5100	l	t	l	m	ob	w	s, t
Do.	45	50	5	30		22.9	3494	l	t	l	m	ob	w	s, t
Salt Creek.	15	2	7		15	22.8	4800	l	t	l	m	ob	w	s, t
Solonis X Riparia, No. 1616.	15	40	3	5	4	22.5	4216	l	t	l	m	ob	w	s, t
Taylor Narbonne.	40	50	30		17	23	3787	l	t	l	m	ob	w	s, t
Marascha:	40	15	10		5	24.1	4087	l	t	l	m	ob	w	s, t
Own roots.	1			15		23.3	6675	m	cy	m	m	r	w	w
Lenoir.								m	cy	m	m	r	w	w
Maraville de Malaga:														
Lenoir.	8	3	14			22.5	5681	v, l	t	m	m	r	b	s, t, w
Riparia X Rupestris, No. 3309.			6			22	5020	v, l	t	m	m	r	b	s, t, w
Solonis X Othello, No. 1613			7	15		23.5	4162	v, l	t	m	m	r	b	s, t, w
Marmola Tobead:														
Own roots.						22	1.0500	m	t	l	m	ob	b	s, t, w
Marmora:														
Lenoir.	30	5	2	3	2	22.9	4630	m-l	t	m	l	r	w	st, t
Riparia Gloire.	2	4	3	32	12	24.5	4395	m-l	t	m	l	r	w	st, t
Rupestris St. George.	12	7	3	25	6	24.8	4680	m-l	t	m	l	r	w	st, t
Marasane:														
Own roots.	15	18	8	10	25	26.2	5595	m	t	l	s	r	w	w
Marzemino:														
Own roots.	3		3	5		24	5050	m	l	m	m	r	b	w
Do.	1		3			26	6025	m	l	m	m	r	b	w
Mataro:														
Own roots.														
Aramon X Rupestris Ganzin, No. 1.	55	38	9	2	4	24	6075	m	cy	c	m	r	b	w
Dog Ridge.	50	12		16	22 1/2	21.7	6810	m	cy	c	m	r	b	w
Herbmon.				3	8	22.7	7481	m	cy	c	m	r	b	w
Lenoir.	60	5		4		19.6	8325	m	cy	c	m	r	b	w
						21.9	7675	m	cy	c	m	r	b	w

TABLE VII.—*Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.*

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric c. c., (grams per 100)	Cluster.			Berry.			Use.
								Size.	Shape.	Compact or loose.	Size.	Shape.	Color.	
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Mataro—Continued. Mourvèdre X Rupestris, No. 1202..... Rupestris Martin..... Rupestris St. George..... Salt Creek..... Taylor Narbonne..... Melon: Dog Ridge..... Rupestris St. George..... Merlot: Own roots..... Meslier: Own roots..... Aramon X Rupestris Ganzin, No. 1..... Lenoir..... Rupestris St. George..... Meunier: Own roots..... Dog Ridge..... Lenoir..... Rupestris St. George..... Meyer, No. 59: Dog Ridge..... Lenoir..... Meyer, No. 60: Dog Ridge..... Lenoir..... Meyer, No. 65: Lenoir..... Meyer, No. 94: Dog Ridge..... Lenoir.....	50 40 50 45 30 20 15 2 3 6 8 15	5 8 12 10 20 15	6 2 4 8											

[illegible]

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Baillif scale.	Acid, as tartaric c. c.). (grams per 100	Cluster.			Berry.		Use.	
	1909	1910	1911	1912	1913			Size.	Shape.	Compact or loose.	Size.	Shape.		Color.
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Monaca Nero: Own roots.....	5	10	4	18	.....	P. cent. 23.8	0.5700	l	t	c	m	r	b	w, t
Mourastel: Own roots.....	3	3	2	8	6	20.2	.8235	m-l	t	m	m	r	b	w
Aramon X Rupestris Ganzin, No. 1.....	40	10	19	10	12	19.9	1.0500	m-l	t	m	m	r	b	w
Dog Ridge.....	.....	.....	.....	12	.....	23.1	1.0125	m-l	t	m	m	r	b	w
Herbement.....	.....	.....	11	2	.....	20	.8850	m-l	t	m	m	r	b	w
Lenoir.....	.....	.....	.....	.....	31	24	.8250	m-l	t	m	m	r	b	w
Riparia X Rupestris, No. 101.....	60	8	15	4	6	22.5	.9330	m-l	t	m	m	r	b	w
Riparia X Rupestris, No. 3309.....	60	5	12	3	15	22.2	.9825	m-l	t	m	m	r	b	w
Solonis X Riparia, No. 1616.....	40	25	11	3	2	21.7	.9855	m-l	t	m	m	r	b	w
Taylor Narbonne.....	60	10	11	.....	12	22.2	.9622	m-l	t	m	m	r	b	w
Mourisco Blanc: Own roots.....	10	6	6	18	2	23	.5400	l	t	l	m	ob	w	t, s, w
Dog Ridge.....	50	10	.....	.....	8	21	.4450	l	t	l	m	ob	w	t, s, w
Lenoir.....	60	10	.....	.....	40	19.4	.6725	l	t	l	m	ob	w	t, s, w
Rupestris St. George.....	25	12	18	.....	30	24.4	.5750	l	t	l	m	ob	w	t, s, w
Taylor Narbonne.....	40	2	6	.....	.....	23.4	.5300	l	t	l	m	ob	w	t, s, w
Mourisco Preto: Own roots.....	12	10	2	3	.....	25.7	.5662	m	t	c	s	o	b	w
Dog Ridge.....	50	6	10	.....	2	24.8	.7637	m	t	c	s	o	b	w
Lenoir.....	40	8	8	2	21	23.3	.8401	m	t	c	s	o	b	w
Rupestris St. George.....	.....	7	6½	½	6	24.7	.7516	m	t	c	s	o	b	w
Muscadelle du Bordelais: Adobe Giant.....	10	4	2	9	2	25.4	.6615	m-l	l	m	m	r	w	w
Aramon X Rupestris Ganzin, No. 1.....	12	8	2	2	2	27.3	.5420	m-l	l	m	m	r	w	w
Lenoir.....	3	5	2	3	3	26.5	.6445	m-l	l	m	m	r	w	w
Mourvèdre X Rupestris, No. 1202.....	15	9	2	5	12	28.9	.5885	m-l	l	m	m	r	w	w
Riparia Gloire.....	1	4	5	8	4	28.8	.6355	m-l	l	m	m	r	w	w
Riparia X Rupestris, No. 101.....	20	20	7	19	16	28.2	.5730	m-l	l	m	m	r	w	w
Riparia X Rupestris, No. 3309.....	20	8	10	15	3	27.7	.5750	m-l	l	m	m	r	w	w
Rupestris St. George.....	25	6	8	28	4	28.2	.6245	m-l	l	m	m	r	w	w
Solonis X Riparia, No. 1616.....	10	0	3	.....	.....	30.5	.5772	m-l	l	m	m	r	w	w
Taylor Narbonne.....	10	½	5	8	.....	32.1	.6450	m-l	l	m	m	r	w	w

Muscad (S. P. I. No. 3033):

Own roots.....

Muscad Albardens:

Own roots.....

Aramon X Rupestris Ganzin, No. 1.....

Lenoir.....

Mourvèdre X Rupestris, No. 1202.....

Riparia Gloire.....

Riparia X Rupestris, No. 101.....

Riparia X Rupestris, No. 3309.....

Rupestris St. George.....

Solonis X Riparia, No. 1616.....

Taylor Narbonne.....

Muscad Bonod:

Berlandieri X Riparia, No. 420A.....

De Grasset.....

Lenoir.....

Riparia X Rupestris, No. 101.....

Riparia X Rupestris, No. 3309.....

Rupestris St. George.....

Solonis Robusta.....

Valencia.....

Muscad Capusines:

Own roots.....

Dog Ridge.....

Lenoir.....

Rupestris St. George.....

Muscadeller:

Own roots.....

Dog Ridge.....

Lenoir.....

Riparia Gloire.....

Rupestris St. George.....

Muscad Gros Noir Hadl:

Own roots.....

Dog Ridge.....

Lenoir.....

Rupestris St. George.....

Taylor Narbonne.....

Muscad Hamburg:

Own roots.....

Aramon X Rupestris Ganzin, No. 1.....

Dog Ridge.....

Lenoir.....

Monticola X Rupestris.....

Riparia X Rupestris, No. 3309.....

Rupestris St. George.....

Rupestris X Berlandieri, No. 219A.....

Taylor Narbonne.....

Muscad Hamburg Noir d'Hongrie:

Own roots.....

15	4	8	1	5	2	16.2	.6600	m-l	t, ey	m	m	ob	b	s, t
4	8	3	1	5	2	23.2	.7569	m-l	l	m	m	ob	b	s, t
12	8	3	3	1 ¹	2	27	.5225	m-l	l	m	m	ob	b	s, t
25	10	6	3	18	20	24.9	.5125	m-l	l	m	m	ob	b	s, t
10	6	2	2	32	1	26.6	.4940	m-l	l	m	m	ob	b	s, t
8	12	1	1	21	6	26.2	.5580	m-l	l	m	m	ob	b	s, t
30	0	10	13	8	6	26.4	.5060	m-l	l	m	m	ob	b	s, t
15	5	8	8	6	6	28	.4462	m-l	l	m	m	ob	b	s, t
5	0	1	2	18	27.1	28	.5835	m-l	l	m	m	ob	b	s, t
6	4	5	5	18	24.7	28	.4375	m-l	l	m	m	ob	b	s, t
						23	.7500	m-l	t	l	l	o	w	s, t
			13	3	30	30	.4650	m	t	l	l	o	w	s, t
10	2	9 ¹	9 ¹	2	22.3	30	.6094	m	t	l	l	o	w	s, t
						31	.5475	m	t	l	l	o	w	s, t
				14	25	31	.5475	m	t	l	l	o	w	s, t
					27	25	.6750	m	t	l	l	o	w	s, t
				8	28	27	.8295	m	t	l	l	o	w	s, t
						29	.5175	m	t	l	l	o	w	s, t
				3	29	27.2	.8250	l	t	l	l	o	b	s, t
15	15				27.3	27.3	.5500	l	t	l	l	o	b	s, t
40	40	6			23.3	23.3	.7175	l	t	l	l	o	b	s, t
40		11		4	24.3	24.3	.7575	l	t	l	l	o	b	s, t
						25.4	.6525	m	cy	c	s	r	w	s, w
	5	1	12	6	25.4	25.4	.6525	m	cy	c	s	r	w	s, w
8	4	15	9	2	28.3	28.3	.6535	m	cy	c	s	r	w	s, w
4	4	1	1	2	25.2	25.2	.7080	m	cy	c	s	r	w	s, w
1		1	1		25.5	25.5	.6200	m	cy	c	s	r	w	s, w
20	3	1	6	10	30.1	30.1	.5790	m	cy	c	s	r	w	s, w
						23.7	.6350	m-l	l	l	l	o	b	s, t, w
			4			25	.7540	m-l	l	l	l	o	b	s, t, w
			3	9		24.4	.7500	m-l	l	l	l	o	b	s, t, w
			5	1	4	23.3	.8075	m-l	l	l	l	o	b	s, t, w
			7			24.4	.8525	m-l	l	l	l	o	b	s, t, w
			2			26.7	.5550	m	l	l	l	o	b	s, t, w
			3			27	.5775	m	l	l	l	o	b	s, t, w
			4			24.5	.7080	m	l	l	l	o	b	s, t, w
			10	2	23	23	.6285	m	l	l	l	o	b	s, t, w
				3		28.2	.6075	m	l	l	l	o	b	s, t, w
						24.5	.6050	m	l	l	l	o	b	s, t, w
			2			22.7	.6130	m	l	l	l	o	b	s, t, w
			13			26.5	.5025	m	l	l	l	o	b	s, t, w
			2 ¹			23.8	.6025	m	l	l	l	o	b	s, t, w
						23.8	.6918	m	l	l	l	o	b	s, t, w

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling's scale.	Acid, as tartaric c. c.). (grams per 100	Cluster.			Berry.			Use.
								Size.	Shape.	Compact or loose.	Size.	Shape.	Color.	
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Muscad Noir d'Hongrie:						<i>P. cent.</i>								
Lenoir.....	8	6	10 ³	11 ¹	3	27	0.4650	m	l	l	m	o	b	s, t, w
Do.....	50	10	3	1	.....	22.6	.6731	m	l	l	m	o	b	s, t, w
Riparia Gloire.....	15	15	3	.....	.....	27.8	.6285	m	l	l	m	o	b	s, t, w
Rupestris St. George.....	12	8	1	16	2	28.1	.5520	m	l	l	m	o	b	s, t, w
Do.....	30	8	9	1 ¹	2	23.6	.6675	m	l	l	m	o	b	s, t, w
Muscad Noir Precoce:														
Aramon X Rupestris Ganzin, No. 2.....	25	4	10	.....	.....	23.9	.6187	m	l	l	m	o	b	s, t, w
Dog Ridge.....	60	2	.....	4	.....	22.8	.5625	m	l	l	m	o	b	s, t, w
Lenoir.....	.....	8	13	1	4	21.5	.6010	m	l	l	m	o	b	s, t, w
Lakeland.....	.....	2	5	.....	.....	21.1	.6327	m	l	l	m	o	b	s, t, w
Monticola X Riparia, No. 1894.....	.....	4	.....	.....	.....	25	.5625	m	l	l	m	o	b	s, t, w
Rupestris St. George.....	25	8	12	.....	.....	23.3	.5837	m	l	l	m	o	b	s, t, w
Rupestris X Berlandieri, No. 219A.....	.....	3	2	.....	.....	26.3	.5437	m	l	l	m	o	b	s, t, w
Solonis X Othello.....	.....	4	6	.....	.....	26	.5100	m	l	l	m	o	b	s, t, w
Taylor Narbonne.....	40	8	12	.....	.....	23.5	.5850	m	l	l	m	o	b	s, t, w
Muscad Rose:														
Dog Ridge.....	10	3	6	5	2	27.3	.6837	m	cy	c	s	l	l	s, t, w
Lenoir.....	7	0	3	1 ¹	.....	27.9	.6400	m	cy	c	s	l	l	s, t, w
Riparia Gloire.....	2	2	2	5	.....	26.7	.5156	m	cy	c	s	l	l	s, t, w
Rupestris St. George.....	15	1	4	8	2	28.7	.5025	m	cy	c	s	l	l	s, t, w
Muscad Rouge de Madrie:														
Aramon.....	.....	.....	.....	.....	.....	.....	.....	m	cy	c	s	l	l	s, t, w
Riparia Gloire.....	.....	.....	.....	.....	.....	.....	.9325	m	cy	c	s	l	l	s, t, w
Rupestris St. George.....	.....	2	.....	6	6	28.6	.7500	m	cy	c	s	l	l	s, t, w
Muscad Talabot:														
Own roots.....	5	.....	.....	.....	.....	.....	.....	s	cy	l	s	l	l	s, t, w
Lenoir.....	10	.....	.....	.....	.....	.....	.5494	s	cy	l	s	l	l	s, t, w
Rupestris St. George.....	.....	.....	.....	.....	.....	.....	.6000	s	cy	l	s	l	l	s, t, w
Napoleon.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	s, t, w
Own roots.....	.....	2	2	2	.....	23.5	.6637	m	l	l	l	ob	w	s, t, w

Nasa Valantiana: Own roots.	1	5	10	3	2	22	.4575 .4706	m	t	m	t	m	c	l	r	w	w	S, t, w S, t, w
Rupestris St. George.																		
Nobblo:																		
Own roots.	5	5	10	3½	4	22.7	.7202	m	cy	m	t	m	c	m	r	b	w	w
Dog Ridge.	40	15	8	8		24.4	.6133	m	cy	m	t	m	c	m	r	b	w	w
Lenoir.	35	8	12	2	3½	22.8	.7050	m	cy	m	t	m	c	m	r	b	w	w
Rupestris St. George.	5	4			6½	25.3	.5400	m	cy	m	t	m	c	m	r	b	w	w
Nobblo Bourgu:																		
Dog Ridge.	10	1½	8	8		24.3	1.0012	m	t	m	t	m	c	m-1	r	b	w	w
Lenoir.	20	5			1½	23.5	.9632	m	t	m	t	m	c	m-1	r	b	w	w
Rupestris St. George.	5	5	2		9	23.8	.8666	m	t	m	t	m	c	m-1	r	b	w	w
Taylor Narbonne.	5	2				25	.8587	m	t	m	t	m	c	m-1	r	b	w	w
Nobblo Fino:																		
Dog Ridge.	12	15	2½	2½		23.7	1.0125	m	t	m	t	m	c	m-1	r	b	w	w
Lenoir.	15	2				23.9	.7987	m	t	m	t	m	c	m-1	r	b	w	w
Rupestris St. George.	10	1	6	6	4	24.3	.9262	m	t	m	t	m	c	m-1	r	b	w	w
Taylor Narbonne.																		
Negrara di Gattinara:																		
Own roots.	2	3		2		26.3	.5550	m	lt	m	t	m	c	m-1	r	b	w	w
Negro Amaro:																		
Own roots.	8	8	19	1		27.5	.9950	m	t	m	t	m	c	s	r	b	w	w
Neiretia di Costilla:																		
Own roots.	3			2		23.8	.5450	m	t	m	t	m	c	m	r	b	w	w
Oera di Boe:																		
Own roots.	1			2	15	25.5	.7313	s	cy	m	t	m	c	m	ob	b	w	w
Ohanez:																		
Lenoir.																		
Olivette Blanche:																		
Adops Giant.																		
Lenoir.	12	4	8	8		17	.8475	l	t	m	t	m	m	l	ob	w	S, t, st	S, t, st
Riparia & Grandes Fentiles.					4	19.7	.9000	l	t	m	t	m	m	l	ob	w	S, t	S, t
Riparia X Rupestris, No. 101.	3	3		21		20.1	.7125	l	t	m	t	m	m	l	ob	w	S, t	S, t
Olivette Chapal:						23.6	.5325	l	t	m	t	m	m	l	ob	w	S, t	S, t
Lenoir.	8					22.1	.6825	l	t	m	t	m	m	l	ob	w	S, t	S, t
Solanis Robusta.				4		19	.9825	l	t	m	t	m	m	l	ob	w	S, t	S, t
Olivette Noir:																		
Lenoir.	8	2		6½		21	.5775	l	t	m	t	m	m	l	ob	b	S, t	S, t
Mourvedre X Rupestris, No. 1202.				15		24	.4050	l	t	m	t	m	m	l	ob	b	S, t	S, t
Riparia X Rupestris, No. 309.						26.2	.8100	l	t	m	t	m	m	l	ob	b	S, t	S, t
Solanis X Othello, No. 1013.				14		24	.5250	l	t	m	t	m	m	l	ob	b	S, t	S, t
Olivette Rose:																		
Lenoir.	20			5½	3	20	.7925	l	t	m	t	m	m	l	ob	r	S, t	S, t
Opiman:																		
Lenoir.																		
Orleans:																		
Own roots.	3	3				21.5	.7925	s	cy	l	t	m	c	s	r	w	w	w
Pagadebilo:																		
Own roots.	3	10	6	10		22	.6112	m	cy	m	t	m	m	m	r	b	w, s, t	w, s, t
Dog Ridge.	40	2	10	1	4	23	.8957	m	cy	m	t	m	m	m	r	b	w, s, t	w, s, t

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric c. c.). (grams per 100	Cluster.			Berry.		Use.	
								Size.	Shape.	Compact or loose.	Size.	Shape.		
	1909	1910	1911	1912	1913									
I	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Pagadebito—Continued.														
Lenoir.....	40½	3	7	10	38	<i>P. cent</i>	0.7530	m	cy	m	m	r	b	w, s, t
Rupestris St. George.....	35	4	11	2	28	23.6	.8035	m	cy	m	m	r	b	w, s, t
Taylor Narbonne.....	15	4	5	2	1	23.4	.6945	m	cy	m	m	r	b	w, s, t
Palatka:														
Own roots.....		8	20	30	.....	18.6	.8325	l	cy-t	c	m	ob	w	s, t
Panariti:														
Adobe Giant.....	3	.....	.....	.....	.....	32	.7735	m-l	cy	c	vs	r	b	r, w, s
Aramon X Rupestris Ganzin, No. 1.....	10	.....	10	.....	.....	32.8	.7050	m-l	cy	c	vs	r	b	r, w, s
Dog Ridge.....	3	.....	4	.....	.....	33	.6562	m-l	cy	c	vs	r	b	r, w, s
Herbement.....								m-l	cy	c	vs	r	b	r, w, s
Lenoir.....			4	.....	.....	29	.5700	m-l	cy	c	vs	r	b	r, w, s
Mourvedre X Rupestris, No. 1202.....	2		3	.....	.....	29.8	.6562	m-l	cy	c	vs	r	b	r, w, s
Riparia Gloire.....	2		3	.....	.....	28.1	.7387	m-l	cy	c	vs	r	b	r, w, s
Riparia X Rupestris, No. 101.....								m-l	cy	c	vs	r	b	r, w, s
Riparia X Rupestris, No. 3309.....	3		5					m-l	cy	c	vs	r	b	r, w, s
Rupestris Martin.....								m-l	cy	c	vs	r	b	r, w, s
Rupestris St. George.....	2		5					m-l	cy	c	vs	r	b	r, w, s
Salt Creek.....	3		3					m-l	cy	c	vs	r	b	r, w, s
Solons X Riparia, No. 1616.....			5					m-l	cy	c	vs	r	b	r, w, s
Taylor Narbonne.....			2					m-l	cy	c	vs	r	b	r, w, s
Parc de Versailles:														
Adobe Giant.....	10	2	3	27	6	21.5	.5225	m	t	m	l	ob	w	s, t
Aramon X Rupestris Ganzin, No. 1.....	2	3	2	3	18	21.5	.5353	m	t	m	l	ob	w	s, t
Dog Ridge.....	5	4	2½	18½	13	19.3	.7450	m	t	m	l	ob	w	s, t
Lenoir.....	1½	1		5	3	21.8	.5362	m	t	m	l	ob	w	s, t
Mourvedre X Rupestris, No. 1202.....	1	2		5	2	21.9	.5431	m	t	m	l	ob	w	s, t
Ponroy.....						20	.6150	m	t	m	l	ob	w	s, t
Riparia Gloire.....	6	1	4	41	20	22.2	.4875	m	t	m	l	ob	w	s, t
Riparia X Rupestris, No. 101.....								m	t	m	l	ob	w	s, t
Riparia X Rupestris, No. 3309.....	1	4	2	12	9	22.1	.5460	m	t	m	l	ob	w	s, t

Rupestris Metallica.....	10	1½	6	23	.5400	m	t	m	l	ob	w	s, t
Rupestris St. George.....	10	2	15	20.3	.5055	m	t	m	l	ob	w	s, t
Solonis X Riparia, No. 1616.....	10	1½	7	22.9	.5306	m	t	m	l	ob	w	s, t
Taylor Narbonne.....	5	1½	21	22.6	.5220	m	t	m	l	ob	w	s, t
Pedro Ximenes:												
Own roots.....												
Adobe Giant.....	20	22	10	23.3	.5153	m	t	l	m	ob	w	w
Aramon X Rupestris Ganzin, No. 1.....	15	20	15	22.1	.5845	m	t	l	m	ob	w	w
Dog Ridge.....	30	40	3	23.7	.4950	m	t	l	m	ob	w	w
Herbmont.....	35	50	12	22.2	.5290	m	t	l	m	ob	w	w
Lenoir.....	10	4	2	23.3	.5350	m	t	l	m	ob	w	w
Mourvedre X Rupestris, No. 1202.....	40	30	2	21.9	.5130	m	t	l	m	ob	w	w
Riparia Gloire.....	40	50	20	22.5	.5355	m	t	l	m	ob	w	w
Riparia X Rupestris, No. 101.....	20	50	2	22	.5430	m	t	l	m	ob	w	w
Riparia X Rupestris, No. 3309.....	30	75	5	22.3	.4645	m	t	l	m	ob	w	w
Rupestris Martin.....	50	60	10	22.4	.6694	m	t	l	m	ob	w	w
Rupestris St. George.....	10	4	6	22.1	.5137	m	t	l	m	ob	w	w
Sate Creek.....	45	40	5	22.1	.4650	m	t	l	m	ob	w	w
Solonis X Riparia, No. 1616.....	25	10	3	21.4	.4890	m	t	l	m	ob	w	w
Taylor Narbonne.....	25	60	2	23	.5695	m	t	l	m	ob	w	w
Perruno:	30	40	25	21.4	.4605	m	t	l	m	ob	w	w
Lenoir.....	20	3	5	23.2	.7806	m	t, cy	m	m	ob	w	w
Rupestris St. George.....	20	3	1½	19.7	.8350	m	t, cy	m	m	ob	w	w
Lenoir.....	4			22	.3975	m	t, cy	m	m	ob	w	w
Persian, No. 21:	2		1	24	.4275	m	t, cy	l	1	ob	w	s, t
Own roots.....			2	28	.555	m	t	l	m	ob	w	s, t
Persian, No. 25:			3	24	.6075	m	t	l	m	ob	w	s, t
Own roots.....						m	t	l	m	ob	w	s, t
Persian, No. 26:			1	24	.7125	m	t	l	m	ob	w	s, t
Own roots.....						m	t	l	m	ob	w	s, t
Petit Syrah:			6½	23.3	.6275	m	t	m	l	ob	b	s, t, w
Own roots.....						m	t, cy	c	m	r	b	w
Adobe Giant.....			6	20	1.0500	m	t, cy	c	m	r	b	w
(Aestivalls X Monticola) X (Riparia X Rupestris, No. 534-5).....				21	.7312	m	t, cy	c	m	r	b	w
Aramon X Rupestris Ganzin, No. 1.....	25	19	25	20	.8125	m	t, cy	c	m	r	b	w
Do.....			7½	20.6	.9025	m	t, cy	c	m	r	b	w
Aramon X Rupestris Ganzin, No. 2.....			4½	23.1	.8325	m	t, cy	c	m	r	b	w
Aramon X Rupestris Ganzin, No. 9.....			1	22	.8733	m	t, cy	c	m	r	b	w
Australis.....			1½	23.5	.8250	m	t, cy	c	m	r	b	w
Berlandieri, No. 1.....			3	20.3	.7345	m	t, cy	c	m	r	b	w
Berlandieri, No. 2.....			3	21	.7550	m	t, cy	c	m	r	b	w
Berlandieri, No. 9.....			4	21.6	.7683	m	t, cy	c	m	r	b	w
Berlandieri X Riparia, No. 34EM.....			4	23	.7900	m	t, cy	c	m	r	b	w
Berlandieri X Riparia, No. 137-11.....			3	22	.8825	m	t, cy	c	m	r	b	w
Berlandieri X Riparia, No. 420A.....			10	25	.8600	m	t, cy	c	m	r	b	w
Do.....			2	25.5	.9562	m	t, cy	c	m	r	b	w

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric c. c., (grams per 100	Cluster.		Berry.		Use.			
								Size.	Shape.	Compact or loose.	Size.		Shape.	Color.	
	1909	1910	1911	1912	1913										
1	17	18	19	20	21	P. cent.	22	23	24	25	26	27	28	29	30
Petit Syrah—Continued.															
Bourisquon X Rupestris, No. 109-4.			17	3	12	21	1.1850		m	t, cy	c	m	r	b	w
(Bourisquon X Rupestris, No. 601) X Calatoola, No. 1326.				3 $\frac{1}{2}$	18 $\frac{1}{2}$	21.8			m	t, cy	c	m	r	b	w
Bourisquon X Rupestris, No. 3907			9	7	9	21.6	.7800		m	t, cy	c	m	r	b	w
Cabernet X Berlandieri, No. 333			8	6 $\frac{1}{2}$	10 $\frac{1}{2}$	20.3	.8041		m	t, cy	c	m	r	b	w
Cabernet X Rupestris Ganzin, No. 33A			6	2	16	22	1.2833		m	t, cy	c	m	r	b	w
Caplain				2		18	.6750		m	t, cy	c	m	r	b	w
Chasselas X Berlandieri, No. 41B			5	1 $\frac{1}{2}$	19	21.6			m	t, cy	c	m	r	b	w
Constantia				4		23	.7725		m	t, cy	c	m	r	b	w
Dog Ridge			24	1	35	20.6	.8150		m	t, cy	c	m	r	b	w
Do	50	10	11	8	6	20.2	.8670		m	t, cy	c	m	r	b	w
Herbement	25	25	14		12	20.5	.8700		m	t, cy	c	m	r	b	w
Hotporup			16	2	11	21.3	.7975		m	t, cy	c	m	r	b	w
Lolly			6	3	13	18.3	.7517		m	t, cy	c	m	r	b	w
Ludoo			1	1	5 $\frac{1}{2}$	21.3	.7700		m	t, cy	c	m	r	b	w
Lenoir	30	18	40	1	6	23.1	.7365		m	t, cy	c	m	r	b	w
Monticola X Riparia, No. 554			3	2	20	21.6	.7917		m	t, cy	c	m	r	b	w
Monticola X Riparia, No. 1808			3	3	4	23.5	1.0087		m	t, cy	c	m	r	b	w
Monticola X Rupestris			8	3	12 $\frac{1}{2}$	23.3	.7550		m	t, cy	c	m	r	b	w
Motley			5	3	5	21	.8225		m	t, cy	c	m	r	b	w
Mourvedre X Rupestris, No. 1202			8	6 $\frac{1}{2}$	19	22.5	.8175		m	t, cy	c	m	r	b	w
Do			20		30	23.6	.8775		m	t, cy	c	m	r	b	w
Mourvedre X Rupestris, No. 1203					1 $\frac{1}{2}$	23	.9750		m	t, cy	c	m	r	b	w
Pardes				2	22 $\frac{1}{2}$	21.6	.7600		m	t, cy	c	m	r	b	w
Riparia du Colorado			1	2	15 $\frac{1}{2}$	19.6	.7850		m	t, cy	c	m	r	b	w
Riparia X (Cordifolia X Rupestris), No. 106-8			4	2 $\frac{3}{4}$	28 $\frac{1}{2}$	19.6	.6508		m	t, cy	c	m	r	b	w
Riparia X Rupestris, No. 101			7	5	34	22.3	.8600		m	t, cy	c	m	r	b	w
Do	50	5	20	5 $\frac{1}{2}$	2	22	.8725		m	t, cy	c	m	r	b	w
Riparia X Rupestris, No. 101-14			11	4 $\frac{1}{2}$	28 $\frac{1}{2}$	19.3	.7617		m	t, cy	c	m	r	b	w
Do									m	t, cy	c	m	r	b	w
Riparia X Rupestris, No. 108-103			8		12 $\frac{1}{2}$	21	.8512		m	t, cy	c	m	r	b	w
Riparia X Rupestris, No. 3306			34	2 $\frac{1}{2}$	37 $\frac{1}{2}$	20.7	.8325		m	t, cy	c	m	r	b	w

Variety and stock (on own roots, if so stated).

Do.	7	1	3	23.3	.9450	m	t, cy	c	m	r	b	w
Riparia X Rupestris, No. 3309	26	8	32	23	.6900	m	t, cy	c	m	r	b	w
Do.	9	3	4	22.2	.7853	m	t, cy	c	m	r	b	w
Rupestris des Causseottes	7	1	21½	21.3	.8617	m	t, cy	c	m	r	b	w
Rupestris Martin	16	5	6	19	.9332	m	t, cy	c	m	r	b	w
Do.	9	1	6	22.4	.9885	m	t, cy	c	m	r	b	w
Rupestris Metallica	5	3½	12½	21	.8020	m	t, cy	c	m	r	b	w
Do.	9	4½	13½	22	1.1025	m	t, cy	c	m	r	b	w
Rupestris Mission	8	4½	13½	20	.8825	m	t	l	m	ob	w	w
Do.	9	4	12½	20.5	.9000	m	t	l	m	ob	w	w
Rupestris St. George	16	4	28	22.3	.7650	m	t	l	m	ob	w	w
Do.	13	6	8	21.5	.8060	m	t	l	m	ob	w	w
Rupestris X Berlandieri, No. 219A	12	6	29	19	.9250	m	t	l	m	ob	w	w
Rupestris X Berlandieri, No. 301A	8	3½	28	17.8	1.0300	m	t	l	m	ob	w	w
Rupestris X Berlandieri, No. 301B	13	3½	32½	20	.8125	m	t	l	m	ob	w	w
Rupestris X (Cordifolia X Rupestris), No. 202-5	10	3½	17	20.3	.7696	m	t	l	m	ob	w	w
Rupestris X Hybrid Azemar, No. 215	2	1½	1½	22.6	.8275	m	t	l	m	ob	w	w
Salit Creek	7	3½	13	21.6	.7425	m	t	l	m	ob	w	w
Do.	5	4	3	20.7	.8250	m	t	l	m	ob	w	w
Solonis Ordinaire	2	2	2	20	.7900	m	t	l	m	ob	w	w
Solonis Robusta	7	5	23½	22	.7300	m	t	l	m	ob	w	w
Do.	8	4	31½	27	.8475	m	t	l	m	ob	w	w
Solonis X Othello	15	4	31½	19.9	.7200	m	t	l	m	ob	w	w
Solonis X Othello, No. 1613	4	3	28	23	.8625	m	t	l	m	ob	w	w
Solonis X Riparia, No. 1616	24	3	28	21.6	.7450	m	t	l	m	ob	w	w
Do.	9	2	7	24.1	.8225	m	t	l	m	ob	w	w
Taylor Narbonne	4	2	7	19.6	.8000	m	t	l	m	ob	w	w
Do.	18	5	8	23.4	.8301	m	t	l	m	ob	w	w
Petit Verdor:												
Ovn roots	4	1	2	24.7	.7700	m	cy	c	m	r	b	w
Dog Ridge	35	7	12	22.8	.8231	m	cy	c	m	r	b	w
Lenoir	40	10½	16	24.2	.7115	m	cy	c	m	r	b	w
Rupestris St. George	45	5	18	23.7	.7325	m	cy	c	m	r	b	w
Taylor Narbonne	30	5	1	23.3	.6844	m	cy	c	m	r	b	w
Peverella:												
Ovn roots	2	17	18	26	.7819	m-l	cy	c	m	r	w	w
Dog Ridge	40	8	18	22.3	.9175	m-l	cy	c	m	r	w	w
Lenoir	50	12	3	22.1	.8715	m-l	cy	c	m	r	w	w
Rupestris St. George	50	14	24	22.8	.8520	m-l	cy	c	m	r	w	w
Taylor Narbonne	40	8	2	25	.5130	m-l	cy	c	m	r	w	w
Piepoli:												
Ovn roots	8	11	—	22.5	.6862	s	cy	l	s	ob	w	w
Piment:												
Lenoir	15	8	—	18.1	.6200	v-l	l	l	l	ob	r	s, t, st
Pince Muscat:												
Ovn roots	2	2	—	21.5	.6937	m	l	c	m	ob	b	s, t
Pineau de Chardonnay:												
Ovn roots	8	10	—	25	.6137	s	cy	c	s	r	w	w
Aramon X Rupestris Ganzin, No. 1	4	4	—	24.3	.6150	s	cy	c	s	r	w	w
Dog Ridge	8	2	2	25.2	.7281	s	cy	c	s	r	w	w
Herbement	2	4	—	24.9	.7012	s	cy	c	s	r	w	w
Lenoir	12	1	2	23.3	.7581	s	cy	c	s	r	w	w

TABLE VII. — *Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.*

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Brix scale.	Acid, as tartaric (c. c.).	Cluster.		Berry.			Use.	
								Size.	Shape.	Compact or loose.	Size.	Shape.		Color.
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Pineau de Chardonnay—Continued.						<i>P. cent.</i>								
Mourvedre X Rupestris, No. 1202.						28.3	0.7125	s	cy	c	s	r	w	w
Riparia X Rupestris, No. 101.	4	5				27	.6900	s	cy	c	s	r	w	w
Riparia X Rupestris, No. 3309.	4	1½	4			27.9	.8475	s	cy	c	s	r	w	w
Rupestris Martin.	3	1	2		2½	27.6	.7744	s	cy	c	s	r	w	w
Rupestris St. George.	7	2	2			27.5	.7527	s	cy	c	s	r	w	w
Salt Creek.	8	1	1		3	25.3	.8128	s	cy	c	s	r	w	w
Solons X Riparia, No. 1616.	25		9½			21.5	.5512	s	cy	c	s	r	w	w
Taylor Narbonne.	2	1	1			28.3	.6791	s	cy	c	s	r	w	w
Pineau de Ribeaupierre:														
Own roots.	4	1½	2	18		23.1	.7031	s	cy	c	s	r	w	w
Dog Ridge.	15	2	3			23.3	.6858	s	cy	c	s	r	w	w
Lenoir.	15	5	7			21.7	.8375	s	cy	c	s	r	w	w
Rupestris St. George.	20	10				23.5	.7200	s	cy	c	s	r	w	w
Pineau Noir Epervay:														
Own roots.	3	1½				27.5	.5137	s	cy	c	s	r	b	w
Lenoir.	10				4	25.1	.4837	s	cy	c	s	r	b	w
Rupestris St. George.	15	3	4			26.1	.7175	s	cy	c	s	r	b	w
Pinot Blanc:														
Own roots.			½	3	3	25.6	.7083	s	cy	c	s	r	w	w
Pinot St. George:														
Own roots.	12	4	8	26	9	24.7	.6560	m	cy	m	m	ob	b	w
Dog Ridge.	35	5	12		2	23.5	.6806	m	cy	m	m	ob	b	w
Lenoir.	15	1		3	20	24.5	.6356	m	cy	m	m	ob	b	w
Rupestris St. George.	10	2	3	½	8	24.7	.6210	m	cy	m	m	ob	b	w
Pinot Vert Doré:														
Own roots.	2		1	3		27.7	.6450	s	t	c	s	ob	w	w
Pis de Chevre des Alps:														
Own roots.														
Dog Ridge.	25	8	½	3		24	.5375	m-l	t	l	m	ob	r	w
Lenoir.	10	15		2	12	21.3	.6618	m-l	t	l	m	ob	r	w
Rupestris St. George.	20	15	12	½	7	19.2	.7412	m-l	t	l	m	ob	r	w
Pis de Chevre Rouge:														
Lenoir.	2		1½			22.6	.7605	m-l	t	l	m	ob	r	w
Lenoir.						25.1	.8062	m-l	t	l	m	ob	r	w

Pizantella:	Own roots.	12	20	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
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TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Ballings	Acid, as tartaric e. c.).	Berry.			Cluster.			Use.
								Size.	Shape.	Compact or loose.	Size.	Shape.	Color.	
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Razaki Zolo:						<i>P. cent.</i>								
Own roots.....	2	4	1	2	.....	22.9	0.5400	m	cy	l	m	ob	r	s, t
Rupestris St. George.....	12				.....	20.8	.3250	m	cy	l	m	ob	r	s, t
Riparia X Rupestris, No. 3306.....	12		13		.....	20.9	.6262	m	cy	l	m	ob	r	s, t
Refresco:														
Own roots.....				2½	.....	25	.8175	s	cy	c	m	r	b	w
Dog Ridge.....	30	10	6	6	4	28.7	.6840	s	cy	c	m	r	b	w
Lenoir.....	50	15	13½	8	28	23.2	.6965	s	cy	c	m	r	b	w
Rupestris St. George.....	40	15	10	3	32	24.1	.6690	s	cy	c	m	r	b	w
Taylor Narbonne.....	30	6	1½	1	3	24.5	.7005	s	cy	c	m	r	b	w
Ribera:														
Lenoir.....	10				.....	22	.6750	s	cy	c	m	r	b	w
Rupestris St. George.....	10				.....	21.5	.4800	s	cy	c	m	r	b	w
Robin Noir.....	15	10	3	10	.....	25.5	.7337	l	cy	m	m	ob	b	w
Rodieres:														
Own roots.....	25	3	12		.....	21.1	.6641	v, l	t	l	l	ob	r	s, st, l
Rose d'Italie:														
Lenoir.....	5	8	½	3	.....	23.2	.7250	m	t	l	m-l	ob	r	s, t, w
Riparia X Rupestris, No. 3309.....	15	7	4		.....	26	.6100	m	t	l	m-l	ob	r	s, t, w
Rupestris St. George.....	10	1			.....	26.2	.6750	m	t	l	m-l	ob	r	s, t, w
Solonis X Riparia, No. 1616.....	15	12	15	2	.....	26.8	.6656	m	t	l	m-l	ob	r	s, t, w
Taylor Narbonne.....	5		1	½	.....	23.6	.6850	m	t	l	m-l	ob	r	s, t, w
Rothgräpler:														
Own roots.....	20	3	20	8	.....	25.1	.6687	m	t	c	m	o	w	w
Roussacq:														
Own roots.....	10	1		25	4	24.5	.7294	m	t	c	m	ob	w	w
Dog Ridge.....	15	10	9	2	.....	21.8	.6712	m	t	c	m	ob	w	w
Lenoir.....	20	15	5	2½	36	22.1	.5900	m	t	c	m	ob	w	w
Riparia X Rupestris, No. 3306.....	40		12		.....	24.9	.5625	m	t	c	m	ob	w	w
Riparia X Rupestris de Jaeger.....				3	.....	23.6	.5437	m	t	c	m	ob	w	w
Rupestris St. George.....	25	8	11		23	24.4	.5212	m	t	c	m	ob	w	w

	20	6	3	27	23.2	.5175	m	t	c	m	ob	w	w	s, t, st
Solomis X Riparia, No. 1616.														
Taylor Narbonne.														
Royal Ascot.														
Own roots.														
Saint Laurent.														
Own roots.														
Adobe Giant.	1½	3	1½	26.3		.4625	m	cy	c	m-l	o	w	w	s, t
Aramon X Rupestris Ganzin, No. 1.	8	14	8	25.4		.4218	m	cy	c	m-l	o	w	w	s, t
Dog Ridge.	10	10	10	2	2	.4130	m	cy	c	m-l	o	w	w	s, t
Herbement.	12	16	2	25.6		.4170	m	cy	c	m-l	o	w	w	s, t
Lenoir.	2	6	3	1	1	.4512	m	cy	c	m-l	o	w	w	s, t
Mourvedre X Rupestris, No. 1202.	12	12	6	25.3		.4462	m	cy	c	m-l	o	w	w	s, t
Riparia Gloire.	5	4	2½	24.1	8	.4555	m	cy	c	m-l	o	w	w	s, t
Riparia X Rupestris, No. 101.	8	12	2	26.5	11	.4039	m	cy	c	m-l	o	w	w	s, t
Riparia X Rupestris, No. 3309.	15	15	3	2	2	.4710	m	cy	c	m-l	o	w	w	s, t
Rupestris Martin.	10	10	1	24.1	2	.4287	m	cy	c	m-l	o	w	w	s, t
Rupestris St. George.	5	10	12	26.2	8	.4125	m	cy	c	m-l	o	w	w	s, t
Salt Creek.	10	5	2	27.2		.4515	m	cy	c	m-l	o	w	w	s, t
Solomis X Riparia, No. 1616.	8			28		.4594	m	cy	c	m-l	o	w	w	s, t
Taylor Narbonne.	12	½		29.1		.3975	m	cy	c	m-l	o	w	w	s, t
Saint Macaire.						.4360	m	cy	c	m-l	o	w	w	s, t
Own roots.						.9056	m-l		c	m	ob	b	w	w
Aramon X Rupestris Ganzin, No. 1.						.8175	m-l		c	m	ob	b	w	w
Dog Ridge.	20	5	11	26		.8630	m-l		c	m	ob	b	w	w
Lenoir.	40	15	13	22	2	1.0275	m-l		c	m	ob	b	w	w
Mourvedre X Rupestris, No. 1202.				24	6	.8250	m-l		c	m	ob	b	w	w
Rupestris St. George.	40	10	11	24.8	20	.9400	m-l		c	m	ob	b	w	w
Solomis X Riparia, No. 1616.				25	4	.7950	m-l		c	m	ob	b	w	w
Taylor Narbonne.	50	10	9	22.4	3	1.1085	m-l		c	m	ob	b	w	w
San Giovelo.														
Dog Ridge.	½			24		1.0500	s	t, cy	l	s	r	b	w	w
Lenoir.	½			24		.8775	s	t, cy	l	s	r	b	w	w
Rupestris St. George.	½			26.2		.9112	s	t, cy	l	s	r	b	w	w
Taylor Narbonne.														
Satin Blanc.														
Dog Ridge.	6			24		.3975	m	cy	c	m	r	w	w	s, t
Lenoir.	3			2	6	.4700	m	cy	c	m	r	w	w	s, t
Rupestris St. George.	8			23.3		.4950	m	cy	c	m	r	w	w	s, t
Sauvignon Blanc.														
Own roots.				25		.5475	m	cy	c	m	r	w	w	s, t
Dog Ridge.	12	10	12	21	3	.8400	m	cy	c	m	r	w	w	s, t
Lenoir.	25	12	15½	20.6	36	.8635	m	cy	c	m	r	w	w	s, t
Rupestris St. George.	5		14	22.3	7	.9100	m	cy	c	m	r	w	w	s, t
Sauvignon Vert.														
Own roots.				25.1		.4785	s	t, cy	l	m	r	w	w	w
Aramon X Rupestris Ganzin, No. 1.	10	10	15	23.4	23	.6495	s	t, cy	l	m	r	w	w	w
Aramon X Rupestris Ganzin, No. 2.	60	40	19	15	13	.3775	s	t, cy	l	m	r	w	w	w
Petardier X Riparia, No. 420A.				27	7	.6300	s	t, cy	l	m	r	w	w	w
Constantia.				21.5	8	.6225	s	t, cy	l	m	r	w	w	w
Dog Ridge.	55	12	16	22.7	20	.5975	s	t, cy	l	m	r	w	w	w
Herbement.	60	15	12	22.9	4	.5970	s	t, cy	l	m	r	w	w	w

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Baillie scale.	Acid, as tartaric c. c., (grams per 100	Cluster.		Berry.			Use.	
								Size.	Shape.	Compact or loose.	Size.	Shape.		Color.
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Sauvignon Vert—Continued.						<i>P. cent.</i>								
Lenoir.....	45	15	9	5	5	24.4	0.5970	s	t, cy		m	r	w	w
Monticola X Riparia, No. 18808.....	4	1	3			24.3	.6530	s	t, cy		m	r	w	w
Mourvedre X Rupestris, No. 1202.....	50	12	13		18	22.8	.6825	s	t, cy	l	m	r	w	w
Riparia X Rupestris, No. 101.....	50	12	13	2	18	22.4	.6915	s	t, cy	l	m	r	w	w
Riparia X Rupestris, No. 101-14.....			2	6		24.5	.5137	s	t, cy	l	m	r	w	w
Riparia X Rupestris, No. 3306.....			10		7	24.5	.6937	s	t, cy	l	m	r	w	w
Riparia X Rupestris, No. 3309.....	60	10	10	8	10	25.6	.6013	s	t, cy	l	m	r	w	w
Rupestris Martin.....	60	12	8		23	23.1	.5130	s	t, cy	l	m	r	w	w
Rupestris St. George.....	55	8	5	2	4	25.1	.6325	s	t, cy	l	m	r	w	w
Salt Creek.....	50	12	9	3	7	24.1	.5805	s	t, cy	l	m	r	w	w
Solonis Robusta.....			2		2	27	.6262	s	t, cy	l	m	r	w	w
Solonis X Othello, No. 1613.....			5½		2	25	.6466	s	t, cy	l	m	r	w	w
Solonis X Riparia, No. 1616.....	55	45	13	15	4	24.9	.5390	s	t, cy	l	m	r	w	w
Taylor Narbonne.....	60	10	20	2	12	24.4	.6185	s	t, cy	l	m	r	w	w
Schiradzouli Blanc.....														
Lenoir.....	2	2	9			23	.4625	m	t	c	m	o	w	S, t, st
Schiradzouli Violet.....														
Lenoir.....	2		5			21	.6150	m	t	c	m	o	r	S, t, st
Semillon:														
Own roots.....	8	3	2	15	4	24.6	.5670	m	cy	l	m	r	w	w
Aramon X Rupestris Ganzin, No. 1.....	30	10	12			24.2	.7556	m	cy	l	m	r	w	w
Berlandieri X Riparia, No. 420A.....				4		25.5	.7680	m	cy	l	m	r	w	w
Dog Ridge.....	30	3	13	8	10	24.5	.7635	m	cy	l	m	r	w	w
Herbement.....	40	15	15	5	12	22.3	.7200	m	cy	l	m	r	w	w
Lenoir.....	20	5	5	3		21.2	.7275	m	cy	l	m	r	w	w
Monticola X Riparia, No. 18808.....					4	27	.5400	m	cy	l	m	r	w	w
Mourvedre X Rupestris, No. 1202.....	20	2				24	.5850	m	cy	l	m	r	w	w
Riparia X Rupestris, No. 101.....	20	8	9	2	5	22.9	.6360	m	cy	l	m	r	w	w
Riparia X Rupestris, No. 3306.....				3		25.6	.8075	m	cy	l	m	r	w	w
Riparia X Rupestris, No. 3309.....	35	5			3	21.8	.6921	m	cy	l	m	r	w	w
Rupestris Martin.....	20	2	2		4½	25	.5319	m	cy	l	m	r	w	w
Rupestris St. George.....	20	8	7	½	3	22.6	.6015	m	cy	l	m	r	w	w

Salt Creek.....	25	5	6	1	4	25.2	.7020	m	cy	l	m	f	w	w	w	w	s, t, st
Solonis X Othello, No. 1613.....	25	5	.....	.....	3	25	.9675	m	cy	l	m	f	w	w	w	w	s, t, st
Solonis X Riparia, No. 1616.....	25	4	4	.....	2	27.2	.5275	m	cy	l	m	f	w	w	w	w	s, t, st
Taylor Narbonne.....	3	4	.....	4	8	25.4	.6900	m	cy	l	m	f	w	w	w	w	s, t, st
Semillon Blanc:																	
Own roots.....	3	4	.....	4	8	23.8	.6206	m	cy	l	m	f	w	w	w	w	s, t, st
Sérine:																	
Own roots.....	2	.....	1	3	2	25.5	.7312	s	cy	c	s	f	b	b	b	b	s, t, st
Dog Ridge.....	15	5	9	.....	3	20.9	.8460	s	cy	c	s	f	b	b	b	b	s, t, st
Lenoir.....	25	8	7	6	14	25	.6662	s	cy	c	s	f	b	b	b	b	s, t, st
Rupestris St. George.....	35	15	19	2	10	25.9	.8145	s	cy	c	s	f	b	b	b	b	s, t, st
Taylor Narbonne.....	.....	10	.....	3	.....	26	.7387	s	cy	c	s	f	b	b	b	b	s, t, st
Servan Rose:																	
Lenoir.....	8	.....	6	.....	6	20	.7150	m	f	l	l	ob	f	f	f	f	s, t, st
Sicilian:																	
Own roots.....	.....	1	.....	3	.....	20.5	.7162	l	l	l	l	ob	w	w	w	w	s, t, st
Aramon X Rupestris Ganzin, No. 1.....	16	.....	.....	.....	.....	17.4	.6937	l	l	l	l	ob	w	w	w	w	s, t, st
Lenoir.....	4	.....	5½	.....	½	24.3	.4875	l	l	l	l	ob	w	w	w	w	s, t, st
Slankamenka:																	
Own roots.....	2	1	2	10	.....	25	.7181	l	l	l	l	ob	w	w	w	w	s, t, st
Souvenir du Congrès:																	
Dog Ridge.....	11	.....	1	.....	.....	22.6	.5550	s	cy	l	s	f	w	w	w	w	s, t, st
Lenoir.....	2	.....	.....	.....	.....	23	.5325	s	cy	l	s	f	w	w	w	w	s, t, st
Rupestris St. George.....	3	.....	½	.....	.....	22	.6825	s	cy	l	s	f	w	w	w	w	s, t, st
Spartanina:																	
Own roots.....	6	3	1	15	.....	21.1	.7237	m	f	l	m	f	b	b	b	b	s, t, st
Suero de Marseille:																	
Dog Ridge.....	20	2	2	10	3	24.7	.5830	s	f	l	m	f	w	w	w	w	s, t, st
Lenoir.....	20	5	9	.....	3	24	.6137	s	f	l	m	f	w	w	w	w	s, t, st
Rupestris St. George.....	10	3	1½	.....	8	24.8	.6075	s	f	l	m	f	w	w	w	w	s, t, st
Taylor Narbonne.....	5	.....	.....	.....	.....	20.8	.4875	s	f	l	m	f	w	w	w	w	s, t, st
Suletha:																	
Own roots.....	25	.....	.....	.....	.....	15.9	1.1475	s	cy	c	m	ob	w	w	w	w	s, t, st
Sultana:																	
Own roots.....	.....	.....	½	.....	4	23.5	.8887	l	l	l	m	f	w	w	w	w	s, t, st
Sultanina:																	
Own roots.....	.....	10	.....	.....	4	25.5	.6187	vl	l	l	m	ob	w	w	w	w	s, t, st
Do.....	20	12	.....	.....	.....	24	.5425	vl	l	l	m	ob	w	w	w	w	s, t, st
Aramon X Rupestris Ganzin, No. 1.....	12	12	4	46	25	25.5	.6112	vl	l	l	m	ob	w	w	w	w	s, t, st
Do.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aramon X Rupestris Ganzin, No. 2.....	.....	.....	9	13	4	24	.5850	vl	l	l	m	ob	w	w	w	w	s, t, st
Australis.....	25	.....	.....	.....	.....	25	.5100	vl	l	l	m	ob	w	w	w	w	s, t, st
Dog Ridge.....	.....	.....	.....	.....	.....	23	.4950	vl	l	l	m	ob	w	w	w	w	s, t, st
Hotporup.....	.....	.....	.....	6	.....	22	.5025	vl	l	l	m	ob	w	w	w	w	s, t, st
Lenoir.....	8	3	4	.....	.....	23.5	.6070	vl	l	l	m	ob	w	w	w	w	s, t, st
Monticola X Riparia, No. 554.....	.....	.....	2	9	.....	24.1	.5500	vl	l	l	m	ob	w	w	w	w	s, t, st
Monticola X Riparia, No. 18804.....	.....	.....	.....	.....	.....	23	.5775	vl	l	l	m	ob	w	w	w	w	s, t, st
Monticola X Riparia, No. 18808.....	.....	.....	8	.....	.....	23	.5325	vl	l	l	m	ob	w	w	w	w	s, t, st
Monticola X Riparia, No. 18815.....	.....	5	.....	.....	.....	25.1	.5100	vl	l	l	m	ob	w	w	w	w	s, t, st
Monticola X Rupestris.....	.....	.....	.....	4	.....	23	.6850	vl	l	l	m	ob	w	w	w	w	s, t, st
Pouroy.....	.....	.....	.....	.....	.....	23	.6150	vl	l	l	m	ob	w	w	w	w	s, t, st

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Aoid, as tartaric (grams per 100 c. c.).	Cluster.			Berry.		Use.	
								Size.	Shape.	Compact or loose.	Size.	Shape.		Color.
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Sultanina—Continued.														
Ramsey.....						<i>P. cent.</i>	0.5470	v-l	l	l	m	ob	w	s, t, w
Riparia X Cordifolia Rupestris, No. 106-8.....		2	8	15		24.7	.5475	v-l	l	l	m	ob	w	s, t, w
Riparia X Rupestris, No. 101.....	15	2				26.6	.5850	v-l	l	l	m	ob	w	s, t, w
Riparia X Rupestris, No. 101-14.....				5		25.5	.5962	v-l	l	l	m	ob	w	s, t, w
Riparia X Rupestris, No. 3306.....				4		23	.4950	v-l	l	l	m	ob	w	s, t, w
Riparia X Rupestris, No. 3309.....	20	3	5			25.2	.6025	v-l	l	l	m	ob	w	s, t, w
Riparia X Rupestris de Jaeger, No. 201.....				16		22	.9250	v-l	l	l	m	ob	w	s, t, w
Rupestris des Caussettes.....				7		20	.5625	v-l	l	l	m	ob	w	s, t, w
Rupestris Martin.....				3		25	1.2175	v-l	l	l	m	ob	w	s, t, w
Rupestris Mission.....				10		26	.5025	v-l	l	l	m	ob	w	s, t, w
Rupestris X Berlandieri, No. 219A.....			6	14		24.8	.5645	v-l	l	l	m	ob	w	s, t, w
Salt Creek.....			10			25	.5400	v-l	l	l	m	ob	w	s, t, w
Solonis Robusta.....				5		29	.5775	v-l	l	l	m	ob	w	s, t, w
Solonis X Othello, No. 1613.....				11		24	.5625	v-l	l	l	m	ob	w	s, t, w
Solonis X Riparia, No. 1616.....	25	20				27.8	.5325	v-l	l	l	m	ob	w	s, t, w
Vermorel.....		3				23	.6000	v-l	l	l	m	ob	w	s, t, w
Viala.....			5	20		25	.5041	v-l	l	l	m	ob	w	s, t, w
Sultanina Rosea:														
Lenoir.....	1	2				25.2	.6675	l	l	l to c	m	ob	r	s, st, t, l
Sylvaner:														
Own roots.....	3													
Aramon X Rupestris Ganzin, No. 1.....	20	10	4	18		25.5	.5868	s	cy	c	s	r	w	w
Dog Ridge.....	20	6	9	3		24.4	.6450	s	cy	c	s	r	w	w
Herbement.....	20	12	6	2	6	25.6	.7365	s	cy	c	s	r	w	w
Lenoir.....	10	3	10	1		24.7	.7312	s	cy	c	s	r	w	w
Riparia X Rupestris, No. 101.....	25	9		2		25.2	.6994	s	cy	c	s	r	w	w
Riparia X Rupestris, No. 3309.....	20	10	6	1	7	26.5	.7475	s	cy	c	s	r	w	w
Rupestris Martin.....	15	2	8	1	6	26.5	.7069	s	cy	c	s	r	w	w
Rupestris St. George.....	24	2	7	1	2	27.7	.7106	s	cy	c	s	r	w	w
Own roots.....		11	10	5		23	.6650	l	l	l	l	ob	w	s, st, t

Tadone:	30	5	4	1 1/2	13	21.1	.7725	l	t	c	m	r	b	w
Dog Ridge.....	55	7	4	1 1/2	13	21.9	.9660	l	t	c	m	r	b	w
Lenoir.....	15	4	6 1/2	1	12	23.3	.9090	l	t	c	m	r	b	w
Rupestris St. George.....	6	5	8 1/2	1	12	22.9	.8550	l	t	c	m	r	b	w
Taylor Narbonne.....														
Tannat:														
Ovn roots.....	8	1	5	30	4	24.6	.5651	m	cy	c	m	r	b	w
Dog Ridge.....	50	18	18	7	23	22.8	.9187	m	cy	c	m	r	b	w
Lenoir.....	40	12	7 1/2	7	23	25	1.0413	m	cy	c	m	r	b	w
Rupestris St. George.....	40	15	4	4	24	25.5	.7400	m	cy	c	m	r	b	w
Taylor Narbonne.....	10	3	2 1/2	2 1/2	24	27.6	1.0325	m	cy	c	m	r	b	w
Teneron:														
Ovn roots.....	8	3 1/2	4	3	4	24.6	.6165	l	t	c	l	r	w	s, st, t
Lenoir.....	6	3	6	12	36	22.5	.7330	l	t	c	l	r	w	s, st, t
Riparia X Rupestris, No. 3306.....						22.3	.9500	l	t	c	l	r	w	s, st, t
Terret Monstre:														
Adobe Giant.....	4	5				23.7	.7550	l	t	m	l	ob	w	s, st, t
Canada.....	7	6				22.6	.7575	l	t	m	l	ob	w	s, st, t
Lenoir.....	8	8	15	6	6	21.5	.6862	l	t	m	l	ob	w	s, st, t
Riparia X Rupestris, No. 101.....						22.3	.7300	l	t	m	l	ob	w	s, st, t
Rupestris St. Georges.....						22.7	.7700	l	t	m	l	ob	w	s, st, t
Solonis X Riparia, No. 1016.....						23.7	.6725	l	t	m	l	ob	w	s, st, t
Valencia.....						25	.6525	l	t	m	l	ob	w	s, st, t
Tinta Amarella:														
Ovn roots.....	12	8	8	12	12	23.4	.7257	m-l	t	c	m	r	b	w
Dog Ridge.....	30	15	15	1	32	23.2	.8169	m-l	t	c	m	r	b	w
Lenoir.....	40	5	15	5	11	22.6	.7560	m-l	t	c	m	r	b	w
Rupestris St. George.....	50	10	15	3	11	23.4	.7160	m-l	t	c	m	r	b	w
Taylor Narbonne.....	60	10	9	4	4	22.1	.7125	m-l	t	c	m	r	b	w
Tinta Cao:														
Ovn roots.....	10	8	5	10		24.5	.5619	m	cy	m	s	r	b	w
Dog Ridge.....	25	3	8 1/2	1		22.4	.7712	m	cy	m	s	r	b	w
Lenoir.....	30	15	13	3	18	23.1	.7250	m	cy	m	s	r	b	w
Rupestris St. George.....	40	3	10	1 1/2	5	23.9	.7680	m	cy	m	s	r	b	w
Taylor Narbonne.....	20	5			4	25	.5580	m	cy	m	s	r	b	w
Tinta de Madeire:														
Ovn roots.....	3	3	1 1/2	2	1	25.3	.6281	m	cy	c	s	ob	b	w
Dog Ridge.....	5	1	11 1/2			24.6	.7700	m	cy	c	s	ob	b	w
Lenoir.....	15	3	6	2	3	27.4	.6390	m	cy	c	s	ob	b	w
Rupestris St. George.....	30	1 1/2	5		20	26.9	.6750	m	cy	c	s	ob	b	w
Taylor Narbonne.....	10					28.2	.4350	m	cy	c	s	ob	b	w
Torok Goller Noir:														
Ovn roots.....	6	3		18		22.5	.4675	m-l	cy	m	m-l	ob	b	w
Traminer:														
Ovn roots.....														
Aramon X Rupestris Ganzin, No. 1.....	40	12	10	2 1/2	1	23	.8175	m	t	m	m-l	r	w	t
Dog Ridge.....	40	15	6 1/2	10	18	25.5	.6412	m	t	m	m-l	r	w	t
Herbement.....	25	10	4		2	22	.7665	m	t	m	m-l	r	w	t
Lenoir.....	40	20	9 1/2	5	4	24.2	.4806	m	t	m	m-l	r	w	t
Mourvedre X Rupestris, No. 1202.....	50	4				22.7	.7365	m	t	m	m-l	r	w	t
Riparia X Rupestris, No. 101.....	40	4	2			22.6	.6862	m	t	m	m-l	r	w	t

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tartaric (c. c.), per 100	Cluster.			Berry.			Use.
								Size.	Shape.	Compact or loose.	Size.	Shape.	Color.	
	1909	1910	1911	1912	1913									
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Traminer—Continued.						<i>P. cent.</i>								
Riparia X Rupestris, No. 3309.....	50	4	13	.....	7	26	0.7631	m	t	m	m-l	r	w	w, t
Rupestris Martin.....	30	3	3	.....	13	22.4	.6712	m	t	m	m-l	r	w	w, t
Rupestris St. George.....	50	15	19	.....	15	23.2	.7612	m	t	m	m-l	r	w	w, t
Salt Creek.....	50	8	5	.....	.....	23.1	.6750	m	t	m	m-l	r	w	w, t
Solonis X Riparia, No. 1616.....	50	15	3	.....	.....	24.5	.7400	m	t	m	m-l	r	w	w, t
Taylor Narbonne.....	55	.....	.....	.....	5	25	.8312	m	t	m	m-l	r	w	w, t
Trentham:														
Own roots.....	3	.....	.....	4	.....	27	.5025	m	t	m	l	ob	b	s, st, w
Lenoir.....	15	.....	6	.....	4	24.6	.5212	m	t	m	l	ob	b	s, st, w
Rupestris St. George.....	20	2	.....	.....	15	24.8	.5655	m	t	m	l	ob	b	s, st, w
Trifere du Japon:														
Lenoir.....	10	1	8	.....	.....	17.6	.5958	l	r	c	l	ob	b	s, st, t
Triomphe:														
Lenoir.....	10	8	15	.....	3½	19.1	.9637	l	r	c	l	ob	b	s, st, t
Trivoli:														
Own roots.....	4	5	6	.....	5	21.1	.8175	l	cy	c	l	ob	b	w
Trojka:														
Own roots.....	1	2	20	18	18	21.1	.7905	l	t	m	l	ob	w	t, st, s
Trousseau:														
Own roots.....	.....	2	2	4	12	28.1	.6532	s	cy	c	s	r	b	w
Dog Ridge.....	10	1	2	1	.....	26.7	.6375	s	cy	c	s	r	b	w
Lenoir.....	20	5	5	.....	3	25	.7425	s	cy	c	s	r	b	w
Rupestris St. George.....	20	4	5	.....	1	25.3	.7376	s	cy	c	s	r	b	w
Taylor Narbonne.....	15	.....	.....	.....	.....	26	.5550	s	cy	c	s	r	b	w
Ullade Blanche d'Ambre:														
Own roots.....	.....	.....	6	.....	.....	21.5	.6112	s	cy	c	s	r	w	w
Valandova:														
Dog Ridge.....	10	.....	.....	.....	.....	22.2	.3825	m	r	m	l	ob	r	s, st, t
Lenoir.....	5	2	.....	.....	.....	21.8	.5250	m	r	m	l	ob	r	s, st, t

Valdepenas:

Own roots.	2	5	2	10	23.8	.7294	m	cy	m	ob	b	w
Aramon X Rupestris Ganzin, No. 1	30	6	22	10	24.5	.6445	m	cy	m	ob	b	w
Dog Ridge.	30	5	9	10	24.5	.6705	m	cy	m	ob	b	w
Herbemont.	45	15	5	11	23.2	.6705	m	cy	m	ob	b	w
Lenoir.	40	3	5 ¹ / ₂	4	23.8	.7530	m	cy	m	ob	b	w
Mourvedre X Rupestris, No. 1202	30	8	10	2	26.1	.6703	m	cy	m	ob	b	w
Riparia X Rupestris, No. 101	30	5	7	15	24.6	.6437	m	cy	m	ob	b	w
Riparia X Rupestris, No. 3309.	30	5	7	29	25.7	.5975	m	cy	m	ob	b	w
Rupestris Martin.	45	5	20	12	24.9	.6074	m	cy	m	ob	b	w
Rupestris St. George.	30	7	18	3 ¹ / ₂	24.1	.7065	m	cy	m	ob	b	w
Salt Creek.	30	15	11	4	25.7	.6131	m	cy	m	ob	b	w
Solonis X Riparia, No. 1616.	25	2	13	2	24.7	.6420	m	cy	m	ob	b	w
Taylor Narbonne.	30	2	13	3			m					
Veltliner:												
Own roots.	3	4	4	12	26.7	.6345	m	t	m	r	r	w
Dog Ridge.	50	5	6 ¹ / ₂	2	27.2	.6415	m	t	m	r	r	w
Herbemont.	35	15	3	3	23.9	.7305	m	t	m	r	r	w
Lenoir.	40	3	1	1	25.6	.6356	m	t	m	r	r	w
Riparia X Rupestris, No. 3306.	30	11		2	25	.7425	m	t	m	r	r	w
Rupestris Martin.	40	3		3	23.6	.6925	m	t	m	r	r	w
Rupestris St. George.	40	3	8	1 ¹ / ₂	25	.7069	m	t	m	r	r	w
Salt Creek.	40		6	1	24	.6850	m	t	m	r	r	w
Verdal:												
Own roots.	20	5	20	12	21.3	.6606	m	t	m	ob	w	s, st, t
Dog Ridge.	40	3	18	4	19.4	.5998	m	t	m	ob	w	s, st, t
Do.	60	70	8	3	21.3	.5719	m	t	m	ob	w	s, st, t
Lenoir.	60	17	22	10	20	.8310	m	t	m	ob	w	s, st, t
Rupestris St. George.	25	5	14	7	20.1	.8300	m	t	m	ob	w	s, st, t
Do.	50	50	8	40	21.9	.6860	m	t	m	ob	w	s, st, t
Verdel:												
Own roots.	1	8	10	8	21.9	.7815	s	cy	c	r	b	w
Adobe Giant.	30	30	4	12	24.3	.8520	s	cy	c	r	b	w
Aramon X Rupestris Ganzin, No. 1	15	30	3	15	24.2	.9035	s	cy	c	r	b	w
Dog Ridge.	20	30	6	10	22.9	.6975	s	cy	c	r	b	w
Mourvedre X Rupestris, No. 1202	30	35	12	25	24.8	.6537	s	cy	c	r	b	w
Riparia X Rupestris, No. 101	16	10	5 ¹ / ₂	14	25.7	.4640	s	cy	c	r	b	w
Riparia X Rupestris, No. 3309.	40	50	5	38	24	.6180	s	cy	c	r	b	w
Rupestris St. George.	30	40	5	12	24.8	.6723	s	cy	c	r	b	w
Solonis X Riparia, No. 1616.	15	5	2	8	25.7	.4530	s	cy	c	r	b	w
Taylor Narbonne.	15	20	6	15	24.5	.4935	s	cy	c	r	b	w
Verdelho:												
Own roots.	8	1 ¹ / ₂		3	25.6	.8006	m	t	m	ob	w	w
Verdelho de Madere:												
Own roots.	3	3	6	2	26.6	.6750	m	t	m	ob	w	w
Aramon X Rupestris Ganzin, No. 1	2	5	5	9	28.9	.7681	m	t	m	ob	w	w
Dog Ridge.	8	9	5	1	26.7	.7275	m	t	m	ob	w	w
Riparia X Rupestris, No. 3309.	10	8	5	5	27.6	.7165	m	t	m	ob	w	w
Rupestris St. George.	8	8	5	12	27.6	.7245	m	t	m	ob	w	w
Solonis X Riparia, No. 1616.	8	4	1	4	27.6	.7144	m	t	m	ob	w	w

TABLE VII.—Relative behavior and value for different purposes of grape varieties tested by grafting on resistant stocks and by growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and stock (on own roots, if so stated).	Weight of fruit per vine (pounds).					Sugar, Balling's scale.	Acid, as tartaric (c. c.).	Cluster.				Berry.			Use.
	1909	1910	1911	1912	1913			Size.	Shape.	Compact or loose.	Size.	Shape.	Color.		
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Vermontino:						<i>P. cent.</i>									
Own roots.....	10	20	20	8	.....	22.1	0.5720	m-1	t	m	l	ob	w	w	
Adobe Giant.....	50	35	3	25	18	22.3	.5730	m-1	t	m	l	ob	w	w	
Aramon X Rupestris Ganzin, No. 1.....	25	30	5	5	16	22.7	.4135	m-1	t	m	l	ob	w	w	
Dog Ridge.....	10	40	10	8	8	22.7	.4225	m-1	t	m	l	ob	w	w	
Herbemont.....						22.5	.3647	m-1	t	m	l	ob	w	w	
Lenoir.....	25	15	3	3	6	22.3	.4950	m-1	t	m	l	ob	w	w	
Mourvedre X Rupestris, No. 1202.....	20	40	5	15	12	23.9	.4865	m-1	t	m	l	ob	w	w	
Riparia Gloire.....	20	30	5	10	2	22.6	.4890	m-1	t	m	l	ob	w	w	
Riparia X Rupestris, No. 101.....	15	50	3	38	10	22.2	.5670	m-1	t	m	l	ob	w	w	
Riparia X Rupestris, No. 3300.....	50	50	10	25	30	21.9	.5370	m-1	t	m	l	ob	w	w	
Rupestris Martin.....	5	4	3	1 1/2	0	24.4	.3550	m-1	t	m	l	ob	w	w	
Rupestris St. George.....	50	30	15	20	12	22.8	.5057	m-1	t	m	l	ob	w	w	
Salt Creek.....	25	30	1	5	5	22.9	.4694	m-1	t	m	l	ob	w	w	
Solonis X Riparia, No. 1616.....	30	30	6	35	12	21.9	.4890	m-1	t	m	l	ob	w	w	
Taylor Narbonne.....	12	50	12	35	24	23.2	.4455	m-1	t	m	l	ob	w	w	
Vernaccia Sarda:						25.6	.8265	m	t	l	m	ob	w	s, sl, t, w	
Own roots.....	12	6	3	32	16										
Vigne de Zercho:						19.2	.7363	l	t	c	l	ob	w	s, sl, t	
Lenoir.....	4	13	13	13	.....	22	.6188	l	t	c	l	ob	w	s, sl, t	
Mourvedre X Rupestris, No. 1202.....			24	13	.....										
Walschriesling:						25.8	.6165	s	cy	c	s	r	w	w	
Own roots.....	6	3	3	8	6										
Werme:						26.1	.6120	m	t	t	m	r	w	w	
Own roots.....	4	2	2	3	1										
White Hanepoot:						27.4	.5812	m	t	l	l	ob	w	s, sl, t, r	
Adobe Giant.....	10	10	6	.....	7	29	.6900	m	t	l	l	ob	w	s, sl, t, r	
Aramon X Rupestris Ganzin, No. 2.....			15	.....	.....	24	.4425	m	t	l	l	ob	w	s, sl, t, r	
Australs.....				6	.....	31	.5025	m	t	l	l	ob	w	s, sl, t, r	
Berlandieri X Riparia, No. 420A.....				5	.....	25.5	.5565	m	t	l	l	ob	w	t, sl, t, r	
Dog Ridge.....	15	15	3	20	3										

Table VIII gives an alphabetical list of additional *Vinifera* varieties grafted on resistant stocks which are under test at the Chico, Colfax, Fresno, Geyserville, Lodi, and Oakville experiment vineyards. Arabic figures are used to indicate the number of different stocks upon which each is grafted and the location of the same. The tests are too young to permit the drawing of conclusions.

TABLE VIII.—*Additional Vinifera varieties of grapes under test on resistant stocks at six experiment vineyards in California.*

[Arabic figures are used to indicate the number of different stocks upon which each variety is grafted and the location of the same.]

Varieties.	Chico.	Colfax.	Fresno.	Geyserville.	Lodi.	Oakville.	Varieties.	Chico.	Colfax.	Fresno.	Geyserville.	Lodi.	Oakville.
Ach-I-Soum						1	Child of Hall	2	5			5	4
Actoni Maceron	1						Cinsaut	1					
Actoniky	1	2	3		4	4	Clairette à Gros Grain	1	6			6	9
Agadia						1	Coarna Neagra	2	5			5	6
Agra-Ash						2	Corinthe Blanc			9		1	
Ahmeur bon Ahmeur	2	4			4	5	Corinthe à Gros Grain	1	5	2		4	7
Ah Saïbe						1	Corinthe Rose	2	6	12		6	8
Ajaki-Odia	1						Coristano	1	8			6	8
Ajmi	1					5	Cornichon	2	4	3		6	4
Ak-Uzum						2	Damas Rose			17			
Albardiens	1						Damugue	1					
Aldara						1	Dattier de Beyrouth					1	3
Alexandria			4				Deis-al-A'anze	1					6
Alicante	2						Dizmar	1					
Almeria	1				7		Dodrelabi	1					
Amlachu						1	Donekusa	2					5
Aneb el Cadi	1	4			4	5	Dronkane	1	6	2		10	6
Angelina	2	5			5	7	Emathia						1
Aramon	1						Emperor	1	3	6		3	9
Arecussia						1	Erz Roumli	1					5
Ash Khuta						2	Fajoumi Jaune	1	5			6	2
Askaree	1					4	Faphly		8	1		9	16
Asmi						6	Faher Som	1	7			7	5
Atch Gau						2	Faher Zagos	1					6
Aswad Karl						2	Ferrara	1	3	25			6
Atch Kiek						2	Fintendo	2					
Aturk-Ash						2	Flame Tokay	1	9	4		4	3
Angulata	1	7	1		5	3	Frankenthal Precoce	2		2			
Awasarghua						2	Fredericton	1	5	1		6	5
Bokator						1	Ghulabi	1					2
Barducci	2	4	2		5	4	Golden Champion						6
Bermestia Bianca	1						Golden Hamburg						5
Bicane	1	5	1		6	5	Golden Queen	1				3	11
Black Hamburg	2	2			2	2	Goolabie	1	5	24		2	2
Black Monukka	1		18		1	8	Green Hungarian	1					5
Black Morocco	1	7			2		Grenache	1					
Black Prince	1						Gros Blanc de Lausanne	1	5	1		7	5
Black Seedless						3	Gros Guillaume			24			10
Black Shahanee	1					5	Hebron	1	8			6	16
Blanc d'Ambre	1	4			5	5	Huaseo			10			1
Blaney White	1	3			6	9	Hunisa	1	6	14			1
Blauer Portugieser	1						Hyeales	1	12	1		8	16
Bowood Muscat	1						Insolia Bianca	2	6	2		6	5
Brustiana	2	5			7	8	Jauzani						1
Bucleugh	1	5			5	8	Jbâ'i						2
Buckland	1					8	Jeresiana	1					2
Calabrian	1	7			7	6	Joannenc						6
Calmette	1		3			2	Jubelli						2
Carlignane	1					6	Kabbajuk	1					2
Castiza		4			4	5	Kadarka						2
Chadeh Arabieh	2					6	Kandihar						1
Chaouch Blanche	1	6			6	5	Kara-sarma						1
Chaouch Rose	1	9			8	8	Kara-uzum						1
Chasselas Rose de Fal-loux			1				Kharashani						2
Chasselas Rouge	1	2				3	Kasûfi-dakar						5
Chasselas St. Bernard	1	2	5		5	4	Kasûfi-inti						2
Chavosche	1						Katchitch						1
Chauche Gris						3	Kechmish-Aly-Blanc	2	5	2		7	3
Chaweesh	1					5	Keropodia	1	7	2		7	8
							Key	1	2			2	6

TABLE VIII.—*Additional Vinifera varieties of grapes under test on resistant stocks at six experiment vineyards in California—Continued.*

Varieties.	Chico.	Colfax.	Fresno.	Geyersville.	Lodi.	Oakville.	Varieties.	Chico.	Colfax.	Fresno.	Geyersville.	Lodi.	Oakville.
Khudud-ul-Banat.....						3	Prune de Cazouls.....	2	5	23		8	5
Kishmish.....					5	2	Purple Damascus.....	2	6				2
Kishmish Daba.....						1	Quagliano.....	1					
Kishmish Red.....						1	Red Hanepoot.....			17			1
Kishmish.....	1					1	Ribier.....	1					
Kordash.....						2	Rodites.....	1	11	25		7	14
Korsa Kishmish.....						1	Ronde Weisse.....						1
Ksil-Isjum.....						1	Rose d'Italie.....	1	6			3	4
Kurdi.....	1					1	Roussaou.....			2			
Kuristi Miei.....	1	5	2		7	4	Saibe.....						2
Kurtelaska.....	1						St. Macaire.....	1					
Leani Zolo.....	2					5	Satin Blanc.....	1	8			6	8
Lignan.....	1	2	2			3	Schiradzouli Violet.....	1	7	22		7	8
Listan.....	1		6			1	Semillon.....						9
Madeleine Royale.....						1	Servan Rose.....	1	6	2		7	7
Malvasia.....	1	6			4	5	Sev-ursa.....						1
Malvasia Rosaria.....						1	Sgtoruk.....						1
Mantua de Pilas.....	1						Shahmani.....						5
Maraville de Malaga.....	1	6	23		6	5	Shakafi.....						2
Marmora.....	1						Shakaribira.....	1					1
Melon.....	1	7				1	Shanzi.....	1					1
Meyer No. 64.....						1	Shatawi.....						5
Meyer No. 114.....						2	Shirshira.....						1
Meyer No. 115.....						1	Sicilien.....	1	9	1		6	11
Meyer No. 801.....						3	Slankamenka.....	2					
Meyer No. 803.....						1	S. P. I. No. 601.....						1
Meyer No. 832.....						2	S. P. I. No. 611.....						1
Meyer No. 866.....						1	S. P. I. No. 614.....						1
Mikksasi.....						5	S. P. I. No. 6914.....						1
Millenium.....	1	3	5			8	S. P. I. No. 30042.....						1
Molinera Gordo.....	2	8	2		5	10	Sultana.....			1			2
Monake.....						1	Sultanina.....			14			4
Mondeuse.....	1						Sultanina Rosea.....		3	38		6	22
Mourestel.....	1					4	Suri.....						6
Mukhkh-ul-Baghl.....						2	Sylvaner.....						5
Muscat Albardiens.....		6					Syrian.....					3	
Muscat Bonod.....	1	6	2		9	10	Tavris.....						1
Muscat Capusines.....	1					4	Tavris.....						1
Muscat Gros Noir Hatif.....	2						Teneron.....	1	9	3			12
Muscat Hamburg.....			5				Terret Monstre.....	1	8	2		8	6
Muscat Noir Precoco.....	1		2		1		Tiffihi Ahmer.....	1					3
Nasa Valentiana.....	1						Tinta Amerella.....	1					
Nebbiolo.....						1	Trifere du Japon.....	1	13	2		5	15
Ohanez.....	1	13	48	79	10	6	Triomphe.....	2	8				5
Olivette Blanche.....	1	15	5		9	17	Trojka.....	1					
Olivette Chaptal.....	1	9	1		6	10	Ubeide.....						6
Olivette Noir.....	2	10			6	10	Uva de Casta.....						6
Olivette Rose.....			1				Uva de Embarque.....						6
Opiman.....	2	3			4	3	Valandova.....			25			
Pagadebito.....	1						Valdepenas.....	1					
Palarusa.....	2						Veltliner.....						11
Panariti.....	1		25				Velusa.....						1
Panse de Roquevaire.....						5	Verdal.....		2			1	1
Paykanee Razuki.....	1						Verdelho de Madere.....			1			
Pearl de Casaba.....	1				3	3	Vigne de Zericho.....	1	6	22		7	6
Pedro Ximenes.....	2						West Prolific.....						4
Perle Imperial Blanche.....	2	7			3	11	White Hanepoot.....			10			
Peru.....	1	1			1	2	White Kapadjulari.....						2
Petit Syrah.....	1			1		3	White Luglienga.....	1	12	2		10	14
Philipi.....						1	White Tokay.....	1	1				2
Piment.....	1	5	29		10	6	Zabalkanski.....	1					3
Pis des Chevre Rouge.....	1	6	3		6	5	Zeine.....						6
Pizzutella.....	2						Zinfandel.....	1					4

The following is an alphabetically arranged list of *Vinifera* varieties in the Brawley Experiment Vineyard (Pl. II, fig. 2), the plantings of which are as yet too young to permit the drawing of conclusions relative to their adaptability:

Ach-I-Soum, Actoni, Actoniky, Agadia, Ahmeur bon Ahmeur, Ajmi, Aleatico, Alexandria, Almeria, Aneb-el-Cadi, Angelina, Augulata, Askari, Aspiran Noir, Atch Kiek, Awasarghua.

Barducci, Beclan, Bermestia Bianca, Boal de Madera, Bowood Muscat, Black Morocco, Black St. Peter, Black Shahanee, Black Zante, Blanc d'Ambre, Blaney White, Blauer Portugieser, Buccleuch, Brustiana.

Carignane, Calabrian, Catarratto a la Porta, Castiza, Chadieh Arabieh, Chavooschee, Chaouch, Chaouch Rose, Chasselas Bouches du Rhone, Chasselas Dore, Chasselas Fontainebleau, Chasselas Florence, Chasselas Montauban, Chasselas Musque Vrai, Chasselas Negrepont, Chasselas Rose, Chasselas Rose de Falloux, Chasselas Rouge, Chasselas St. Bernard, Child of Hall, Cinsaut, Clairette à Gros Grain, Clairette Blanche, Coarna Neagra, Commandeur, Corinthe Rose, Corinthe à Gros Grain, Cornichon, Coristana, Crujidero.

Damascus, Danugue, Dattier de Beyrouth, Dizmar, Dodrelabi, Downing, Drnekusa, Dronkane, Duc de Magenta.

Emperor.

Fajaumi Jaune, Faphly, Feher Goher Noir, Feher Som, Feher Zagors, Ferrara, Fintendo, Flame Tokay, Foster, Frankenthal Precoco, Fredericton.

Golden Champion, Golden Hamburg, Golden Queen, Goolabie, Gradiska, Green Hungarian, Grenache, Gros Blanc de Lausanne, Gros Maroc.

Hebron Hycals, Hunisa, Huasco, Hutab.

Insolia Bianca.

Jura Muscat.

Kadarka, Kahallillee, Kakour, Keropodia, Kishmish, Kuristi Mici, Kurtelaska.

Lahntraube, Lampasas, Leani Zolo, Luglienga.

Madeleine Angevine, Madeleine Blanche, Madeleine Rose, Madeleine Royale, Mamelon, Malaga, Malvasia, Malvasia Rosario, Maraville de Malaga, Marascina, Marzamina, Meslier, Millenium, Mission, Molinera Gordo, Mondeuse, Mourisco Bianca, Muscateller, Muscatelle Fino, Muscat Albardiens, Muscat Bonod, Muscat Capusines, Muscat Gros Noir Hatif, Muscat Hamburg, Muscat Madera Rose, Muscat Noir de Hongrie, Muscat Noir Precoco, Muscat Talabot.

Napoleon, Nasa Valentiana, Negrara di Gattinara, Neiretta di Costillo.

Ocu di Boe, Ohanez, Olivette Blanche, Olivette de Cadenet, Oliver de Serres, Olivette Noir.

Pagadebito, Parc de Versailles, Palarusa, Panariti, Paykanee Razuki, Pearl de Casaba, Perruno, Persian, No. 20; Persian, No. 21; Persian, No. 23; Persian, No. 25; Persian, No. 26; Persian, No Number; Persian, No Tag; Philipi, Piment, Pince Muscat, Prune de Cazouls.

Rose de Italie, Royal Ascot, Rozaki Zolo.

Schach-I-Soum, Schiradzouli Blanc, Schiradzouli Violet, Servan Blanc, Servan Rose, Sgotoruk, Shiraz, Sicilian, Slankamenka, St. Laurient, Sultana, Sultanina, Sultanina Rosea, Syrian.

Terret Monstre, Tinta Amerilla, Torok Goher Noir, Trentham Black, Trifere du Japon, Triomphe, Trivoti, Trojka, Trouseau, Tsien Tsien.

Valdepenas, Veltliner, Verdal, Vernaccia Sarda, Vigne de Zericho.

Wilmot Hamburg, Wilmot No. 16, White Corinth, White Tokay.

Zante.

Table IX shows additional tests of improved American native and Franco-American grape varieties grafted on resistant stocks which are being made at the Fresno and Oakville experiment vineyards. (See Pl. I, figs. 1 and 2.) Arabic figures are used to indicate the number of different stocks upon which each is grafted and the location of the same. The tests are too young to permit the drawing of conclusions.

TABLE IX.—*Varieties of American native and Franco-American grapes under test on resistant stocks at the Fresno and Oakville experiment vineyards, showing the number of different stocks included in the test.*

Varieties.	Fresno.	Oakville.	Varieties.	Fresno.	Oakville.
Agawam.....stocks..	1	4	Concord.....stocks..	5	10
America × Malaga No. 2:			Concord Improved...do.....		1
No. 1.....stocks..	1	1	Continental.....do.....		1
No. 2.....do.....	2	2	Lindley.....do.....	4	11
No. 16.....do.....	1	1	Lucile.....do.....		6
Armistead Seedling...do.....		1	Massasoit.....do.....		1
Barry.....do.....	1	4	Moore.....do.....	1	7
Brighton.....do.....	4	6	Niagara.....do.....	5	6
Brilliant.....do.....		4	Perkins.....do.....		1
Campbell.....do.....		5	Rebecca.....do.....	1	4
Catawba.....do.....	1	9	Riggs No. 16.....do.....		1
Champion.....do.....		2			

The explanation of columns already given for Table VII will apply for the most part to Table X, showing the relative behavior and value for different purposes of improved American native and Franco-American grape varieties, except that the parentage of the varieties displaces the designation of the stock, the column for the "Year grafted" is omitted, and the congeniality column is changed to a growth-rating column, because all the varieties are on their own roots. The column for weight of pruning is also omitted. The abbreviations used to designate the parent species are as follows: Aest. for Aestivalis, Bourq. for Bourquiniana, Champ. for Champini, Lab. for Labrusca, Lins. for Linsecomii, Rip. for Riparia, Rup. for Rupestris, Vin. for Vinifera.

TABLE X.—Relative behavior and value for different purposes of improved native American and Franco-American varieties of grapes growing on their own roots in eleven experiment vineyards in California.

Variety and parentage.	Experiment vineyard.	Year planted.	Growth rating.	How pruned.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
						Early season.	Late season.	Early season.	Late season.	Early season.	Late season.	Early season.	Late season.
1		3	4	5	6	7	8	9	10	11	12	13	14
Agayam: Lab. X Vin.	O	1905	Per cl. 88	s	1 to 3	Mar. 25	Mar. 26	May 15	May 27	May 21	May 31	Sept. 18	Oct. 6
Do.	J	1905	88	s	.....	Mar. 5	Mar. 20	May 3	May 20	May 12	May 24	Aug. 29	Sept. 17
Albania: Lins. X (Aest. X Lab. X Bourq.)	O	1903	88	s	2 to 4	Mar. 19	Apr. 4	May 22	June 6	May 27	June 20	Sept. 23	Oct. 8
Alicante Ganzin: Vin X Rup.	O	1907	80	s	2 to 3	do.....	Apr. 3	May 20	May 30	May 29	June 12	Sept. 24	Oct. 8
Alicante X Rupestris Terrace, No. 20: Vin X Rup.	O	1903	94	s	1 to 4	Mar. 14	Apr. 1	May 15	May 27	May 27	May 31	Sept. 26	Oct. 7
Do.	Gi	1905	94	s	.....	Mar. 8	Mar. 25	May 9	June 13	May 24	May 29	Sept. 18	Oct. 28
Do.	Cx	1906	96	c, s	.....	Mar. 17	Apr. 1	June 1	June 8	June 5	June 13	Sept. 15	Oct. 2
Amerbonte: Bourq. X (Lins. X Rup.)	F	1903	44	s	.....	Mar. 12	do.....	May 20	May 30	May 26	June 3	.....	.....
Do.	C	1907	94	c, s	.....	Mar. 28	do.....	May 1	June 8	May 5	June 19	.....	.....
Do.	O	1903	94	s	.....	Mar. 20	Apr. 5	June 2	June 8	June 7	June 19	.....	.....
Atoka: Do.	F	1903	88	s	.....	Mar. 12	Mar. 30	May 12	May 20	May 20	May 25	Aug. 29	Sept. 17
(Lins. X Rup.) X (Bourq. X Lab.)	O	1903	97	s	3 to 5	Mar. 15	Apr. 7	May 22	June 1	May 27	June 20	Sept. 24	.....
Barry: Lab. X Vin.	F	1905	77	s	1 to 4	Mar. 7	Mar. 25	Apr. 25	May 12	May 9	May 14	Aug. 15	Sept. 4
Do.	O	1905	77	s	.....	Mar. 30	.....	Apr. 15	May 30	May 24	June 1	Sept. 8	.....
Berekmans: Rip. X (Lab. X Bourq.)	F	1904	57	s	.....	Mar. 5	Mar. 13	Apr. 25	May 15	May 10	May 21	Aug. 15	Sept. 20
Do.	S	1904	80	s	.....	Mar. 16	Apr. 1	May 27	June 25	May 31	June 29	Mar. 30	Oct. 4
Big Extra: Lins. X (Lab. X Vin.)	Cx	1907	90	s	.....	Mar. 19	Apr. 9	May 1	June 14	May 8	June 20	Sept. 24	Do.
Do.	F	1904	87	s	.....	Mar. 8	Apr. 2	May 18	June 7	May 20	June 7	Aug. 30	Sept. 21
Do.	G	1904	85	s	.....	Mar. 1	Mar. 28	May 23	June 18	May 27	June 23	Sept. 20	Sept. 28
Do.	L	1904	67	s	.....	Mar. 11	Apr. 3	May 24	June 24	May 28	June 28	Oct. 1	Oct. 10
Do.	L	1904	90	c, s	.....	Mar. 10	do.....	May 20	June 8	May 25	June 13	Sept. 24	Oct. 26

Do.	1904	93	S	3 to 5	Mar. 30	Apr. 8	June 9	June 18	May 26	June 23	Sept. 26
Do.	1903	87	S	.....	Mar. 20	do.	May 21	June 8	May 30	June 29	Sept. 24
Do.	1904	89	S	.....	Mar. 16	Apr. 10	May 26	June 25	May 30	June 29	Sept. 24
Blondin:											
(Bourq. X Aest.) X (Lins. X Lab.)											
Do.	1903	53	S	.....	Mar. 14	Apr. 1	May 18	June 5	May 23	June 30	Sept. 5
Bourisquon X Rupestris, No. 601:											
Vin. X Rup.											
Do.	1906	86	S	1 to 4	Mar. 20	Apr. 8	May 19	June 5	May 23	June 30	Sept. 5
Do.	1905	90	S	.....	Mar. 18	Apr. 10	May 3	June 7	May 9	June 11	Sept. 5
Do.	1903	87	S	.....	Mar. 14	Apr. 1	May 8	May 23	May 12	May 28	Sept. 5
Do.	1904	93	C, S	.....	Mar. 8	Apr. 31	May 10	May 18	do.	May 23	do.
Do.	1907	90	S	.....	Mar. 14	Apr. 1	May 10	June 5	do.	May 23	Sept. 5
Do.	1906	95	S	.....	Mar. 26	Mar. 29	May 27	.....	June 1	June 11	Sept. 23
Do.	1903	65	S	1 to 3	Mar. 21	Apr. 3	May 18	.....	May 23	June 8	Oct. 8
Do.	1906	90	S	.....	Mar. 19	Apr. 6	June 2	June 15	May 23	June 30	Sept. 24
Bourisquon X Rupestris, No. 603:											
Vin. X Rup.											
Do.	1904	84	S	.....	Mar. 12	Apr. 1	May 15	June 5	May 20	May 27	Oct. 5
Do.	1905	91	S	.....	Mar. 14	Apr. 3	May 10	June 3	May 13	June 6	Sept. 25
Do.	1903	93	S	.....	Mar. 11	Mar. 31	do.	June 5	May 14	June 8	Oct. 8
Do.	1905	79	S	.....	Mar. 21	Apr. 4	May 25	June 5	May 14	June 10	Sept. 23
Do.	1904	92	S	1 to 4	Mar. 22	Apr. 5	May 16	June 10	May 21	June 14	Sept. 25
Do.	1905	87	S	.....	Mar. 17	Apr. 5	May 23	June 10	May 26	June 14	Sept. 25
Bourisquon X Rupestris, No. 109-4:											
Vin. X Rup.											
Do.	1907	93	S	.....	Mar. 16	Apr. 6	May 29	June 1	June 5	June 13	do.
Do.	1907	89	S	.....	Mar. 25	Mar. 28	May 7	May 21	May 18	May 23	Sept. 5
Do.	1904	93	S	.....	Mar. 5	Mar. 24	May 1	May 15	May 18	May 23	Sept. 11
Do.	1904	94	S	.....	Mar. 10	Apr. 5	May 23	June 10	May 28	June 15	Sept. 20
Do.	1904	97	S	.....	do.	do.	May 9	May 28	May 13	June 1	Oct. 2
Do.	1904	84	S	.....	Mar. 28	Mar. 30	May 23	June 8	May 27	June 14	Sept. 26
Do.	1904	98	S	2 to 3	Mar. 17	Mar. 26	May 12	May 24	May 17	May 23	Sept. 23
Do.	1905	98	S	.....	Mar. 12	Apr. 3	May 20	June 10	May 25	June 15	Sept. 24
Bourisquon X Rupestris, No. 3907:											
Vin. X Rup.											
Do.	1906	91	S	.....	Mar. 19	Apr. 22	May 1	June 8	May 7	June 14	Sept. 5
Do.	1907	90	S	.....	Mar. 12	Mar. 22	May 8	May 23	May 18	May 26	Sept. 9
Do.	1904	94	S	.....	Mar. 6	Mar. 13	May 5	May 15	May 22	June 11	Sept. 25
Do.	1904	93	S	.....	Mar. 2	Mar. 18	May 8	June 7	May 18	June 12	Sept. 25
Do.	1904	97	S	.....	Mar. 13	Apr. 2	May 19	June 1	May 24	June 20	Sept. 24
Do.	1904	87	S	.....	Mar. 16	Apr. 10	May 21	June 8	May 25	June 12	Sept. 24
Bourisquon X Rupestris, No. 4308:											
Vin. X Rup.											
Do.	1907	94	S	.....	Mar. 19	Apr. 8	June 4	June 7	June 8	June 12	Oct. 2
Do.	1904	99	S	.....	Mar. 18	Apr. 1	May 8	May 20	May 15	May 25	Sept. 9
Do.	1907	94	S	.....	Mar. 13	Apr. 3	May 19	June 10	May 25	June 15	Sept. 30
Do.	1904	98	S	2 to 4	Mar. 20	Apr. 1	May 20	May 23	May 27	June 5	Sept. 28
Bourisquon X Rupestris, No. 4308:											
Vin. X Rup.											
Do.	1906	92	S	.....	Mar. 30	Apr. 25	June 4	June 8	May 14	June 14	Sept. 5
Do.	1907	89	S	.....	Mar. 10	Apr. 3	May 10	May 23	May 11	May 23	Sept. 23
Do.	1904	96	S	.....	Mar. 14	Apr. 26	May 8	May 18	May 15	June 1	Sept. 8
Do.	1904	85	S	.....	Mar. 20	Mar. 26	May 27	June 8	May 30	June 14	Sept. 26
Do.	1904	95	S	2 to 3	Mar. 18	Mar. 29	May 19	May 25	May 30	June 5	Sept. 22
Brighton:											
Lab. X Vin											
Do.	1905	87	S	2 to 3	Mar. 15	Apr. 7	May 18	May 28	May 24	May 31	Sept. 9

TABLE X.—Relative behavior and value for different purposes of improved native American and Franco-American varieties of grapes growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and parentage.	Experiment vineyard.	Year planted.	Growth rating.	How pruned.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
						Early season.	Late season.	Early season.	Late season.	Early season.	Late season.	Early season.	Late season.
1		3	4	5	6	7	8	9	10	11	12	13	14
Brilliant: Lab. X (Vin. X Bourq.)	Gi	1905	<i>Per et.</i> 77			Mar. 6	Apr. 1	May 26	May 30	June 3	.....	Sept. 5	Sept. 25
Do.	F	1904	80	s	.....	Mar. 12	.....	May 16	May 20	May 15	May 24	Aug. 20	Sept. 4
Do.	G	1905	73	s	.....	Mar. 2	Mar. 20	May 22	June 18	May 26	June 23	Sept. 24	
Do.	M	1904	84	s	.....	Mar. 26	Mar. 31	May 30	June 7	June 10	June 11	Oct. 4	
Canada: (Rip. X Lab.) X Vin.	F	1903	87	s	.....	Mar. 10	Mar. 25	May 10	May 25	May 15	May 30	Sept. 5	Sept. 19
Do.	L	1906	88	s	.....	Mar. 17	Apr. 13	May 8	May 30	May 12	June 4	Sept. 20	Sept. 23
Do.	O	1903	96	s	1 to 3	Mar. 20	Apr. 4	May 15	May 25	May 22	June 10	Sept. 10	Sept. 26
Do.	S	1906	93	s	.....	Mar. 10	Apr. 12	May 23	May 15	June 19	.....	Sept. 24	Sept. 26
Carignane X Rupestris, No. 404: Vin X Rup.	F	1904	97	s	.....	Mar. 7	Mar. 30	May 10	May 20	May 15	May 26	Sept. 9	Sept. 17
Do.	C	1904	95	s	.....	Mar. 16	Mar. 20	May 19	June 7	May 24	June 12	Sept. 23	Sept. 26
Do.	Li	1905	84	s	.....	Mar. 13	Apr. 1	May 23	June 10	June 8	June 14	Sept. 23	Oct. 1
Do.	M	1904	87	s	.....	Mar. 29	.....	May 22	June 8	June 2	June 13	Sept. 26	Oct. 8
Do.	O	1904	96	s	1 to 3	Mar. 18	.....	May 22	May 27	May 26	June 1	.....	Oct. 7
Do.	S	1907	89	s	.....	Mar. 12	.....	May 29	June 5	June 4	June 20	Sept. 24	
Carignane X Rupestris, No. 501: Vin X Rup.	L	1904	92	s	.....	Mar. 7	Mar. 30	May 10	June 3	May 14	June 5	Oct. 26	
Do.	M	1904	94	s	.....	Mar. 26	Mar. 29	June 3	June 12	June 5	June 17	Oct. 10	Oct. 1
Do.	O	1904	95	s	1 to 3	Mar. 16	Apr. 1	May 14	May 18	June 1	June 10	Oct. 17	
Do.	S	1907	90	s	.....	Mar. 14	Mar. 30	May 27	June 10	.....	.....	Oct. 17	
Carmen: Lins. X (Vin. X Lab. X Bourq.)	F	1904	52	s	.....	.....	.....	May 21	May 26	May 25	June 3	Aug. 23	Sept. 19
Do.	O	1903	74	s	1 to 3	Mar. 16	Apr. 3	May 22	May 31	May 27	June 23	Sept. 10	Sept. 25
Castel, No. 1028: Rip. X Vin.	O	1907	84	s	2 to 4	Mar. 20	Apr. 6	May 28	May 29	June 2	June 13	Sept. 9	Oct. 6
Castel, No. 10002: (Lab. X Rup.) X Vin.	O	1907	87	s	2 to 4	Mar. 19	Apr. 1	May 7	May 25	May 21	May 27	Sept. 22	Oct. 9

Catavba:	Lab. X Vin.	1906	68	s	Mar. 20	Apr. 8	May 26	June 3	May 30	June 8	Sept. 24	Sept. 15
Do.	Do.	1905	68	s	Mar. 7	Apr. 8	May 5	June 15	May 17	June 20	Sept. 11	Sept. 24
Do.	Do.	1905	68	s	Mar. 10	Apr. 31	May 24	June 5	May 28	June 20	Sept. 26	Sept. 15
Do.	Do.	1905	81	s	Mar. 11	Apr. 3	May 12	June 18	May 16	June 27	Sept. 23	Oct. 3
Do.	Do.	1905	88	s	Mar. 26	Apr. 10	May 30	June 3	June 3	June 16	Sept. 10	Oct. 10
Do.	Do.	1905	87	s	Mar. 22	Apr. 1	May 17	May 25	June 22	June 11	Sept. 9	Oct. 10
Do.	Do.	1905	77	s	Mar. 12	Apr. 2	May 20	June 10	May 30	June 14	Sept. 24	Oct. 14
Do.	Do.	1905	90	c, s	Mar. 15	Apr. 1	May 9	May 27	May 24	May 25	Sept. 25	Sept. 21
Do.	Do.	1905	87	s	Mar. 13	Apr. 25	May 10	May 18	May 21	June 1	Sept. 5	Oct. 6
Do.	Do.	1905	86	s	Mar. 14	Apr. 1	May 16	May 28	May 21	June 1	Sept. 9	Oct. 6
Do.	Do.	1905	79	s	Mar. 14	Apr. 1	May 16	May 28	May 21	June 1	Sept. 9	Oct. 6
Do.	Do.	1905	94	s	Mar. 22	Apr. 3	May 19	May 24	May 24	June 11	Sept. 27	Sept. 12
Do.	Do.	1903	91	s	Mar. 6	Mar. 15	May 6	May 16	May 15	May 21	Sept. 8	Sept. 12
Do.	Do.	1904	95	s	Mar. 17	Mar. 25	May 19	May 25	May 24	June 1	Sept. 27	Sept. 12
Do.	Do.	1904	91	s	Mar. 17	Mar. 25	May 19	May 25	May 24	June 1	Sept. 27	Sept. 12
Do.	Do.	1904	95	s	Mar. 17	Mar. 25	May 19	May 25	May 24	June 1	Sept. 27	Sept. 12
Do.	Do.	1903	88	c, s	Mar. 9	Apr. 5	May 12	May 20	May 20	May 26	Sept. 25	Sept. 30
Do.	Do.	1903	90	s	Mar. 9	Apr. 5	May 12	May 20	May 20	May 26	Sept. 25	Sept. 30
Do.	Do.	1907	78	s	Mar. 6	Mar. 24	May 13	May 22	May 18	June 9	Sept. 24	Sept. 27
Do.	Do.	1903	94	s	Mar. 16	Mar. 22	May 20	May 30	May 24	June 4	Sept. 30	Oct. 13
Do.	Do.	1903	83	s	Mar. 22	Mar. 30	May 8	May 22	May 12	May 29	Oct. 9	Oct. 13
Do.	Do.	1907	83	s	Mar. 22	Mar. 30	May 8	May 22	May 12	May 29	Oct. 9	Oct. 13
Do.	Do.	1903	90	s	Mar. 21	Apr. 9	May 19	May 29	May 24	June 3	Sept. 24	Sept. 24
Do.	Do.	1903	96	s	Mar. 17	Mar. 25	May 22	May 28	June 1	June 5	Sept. 26	Sept. 26
Do.	Do.	1906	88	s	Mar. 23	Apr. 6	June 1	June 7	June 5	June 12	Oct. 4	Oct. 4
Do.	Do.	1905	68	s	Mar. 18	Apr. 1	May 26	June 1	June 5	June 12	Oct. 4	Oct. 4
Do.	Do.	1904	76	s	Mar. 17	Apr. 30	May 12	May 28	May 17	June 2	Sept. 25	Sept. 25
Do.	Do.	1904	83	s	Mar. 12	Apr. 10	May 20	June 1	June 5	June 7	Sept. 20	Sept. 20
Do.	Do.	1903	56	s	Mar. 1	Apr. 1	May 20	June 1	May 15	June 6	Sept. 6	Sept. 6
Do.	Do.	1907	88	s	Mar. 12	Apr. 27	May 22	June 8	May 27	June 13	Oct. 15	Oct. 15
Do.	Do.	1907	94	s	Mar. 15	Apr. 4	May 28	June 4	June 8	June 12	Sept. 15	Sept. 15
Do.	Do.	1904	93	c, s	Mar. 8	Mar. 15	May 6	May 24	May 25	May 29	Sept. 10	Sept. 10
Do.	Do.	1904	93	s	Mar. 4	Mar. 14	do	do	May 12	May 21	Sept. 25	Sept. 25
Do.	Do.	1904	94	s	Mar. 9	Mar. 30	May 12	June 8	May 16	June 13	Sept. 24	Sept. 24
Do.	Do.	1904	86	s	Mar. 26	Apr. 4	May 29	June 6	June 3	June 10	Sept. 26	Sept. 26
Do.	Do.	1904	93	s	Mar. 18	Mar. 25	May 17	May 25	May 23	May 29	Sept. 25	Sept. 25
Do.	Do.	1904	91	s	Mar. 10	Apr. 8	May 20	June 15	May 24	June 19	Sept. 22	Sept. 22
Do.	Do.	1907	90	s	Mar. 17	Mar. 28	May 10	May 25	May 25	May 25	Sept. 20	Sept. 20
Do.	Do.	1904	98	c, s	Mar. 10	Mar. 25	do	do	May 17	May 17	Sept. 4	Sept. 4
Do.	Do.	1904	95	s	Mar. 2	Mar. 22	May 17	June 17	May 21	June 16	Sept. 25	Sept. 25
Do.	Do.	1905	96	s	Mar. 12	Apr. 6	May 23	June 8	May 29	June 12	Sept. 23	Sept. 23
Do.	Do.	1904	87	s	Mar. 26	do	do	do	May 31	June 14	Sept. 26	Sept. 26
Do.	Do.	1904	94	s	Mar. 20	Apr. 7	May 18	May 24	May 18	May 31	Sept. 27	Sept. 27
Do.	Do.	1904	90	s	Mar. 10	Apr. 5	May 27	June 8	May 31	June 13	Sept. 20	Sept. 20

TABLE X.—Relative behavior and value for different purposes of improved native American and Franco-American varieties of grapes growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and parentage.	Experiment vineyard.	Year planted.	Growth rating.	How pruned.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
						Early season.	Late season.	Early season.	Late season.	Early season.	Late season.	Early season.	Late season.
1		3	4	5	6	7	8	9	10	11	12	13	14
Couderc, No. 503: Rup. X Vin.	Cx	1907	Per cl. 88	S	.....	Mar. 18	Apr. 1	June 1	do	June 5	June 15	Sept. 26	Oct. 4
Do.	Gi	1907	89	S	.....	Mar. 13	Mar. 30	May 18	May 23	May 22	May 31	Sept. 25	Sept. 19
Do.	F	1904	89	S	.....	Mar. 13	Mar. 20	May 17	May 21	May 18	June 17	Sept. 26	Sept. 23
Do.	L	1904	85	S	.....	Mar. 12	Mar. 12	May 20	June 8	May 24	June 13	Sept. 23	Oct. 10
Do.	Li	1904	83	S	.....	Mar. 28	Apr. 6	May 28	do	June 2	June 12	Sept. 28	Oct. 10
Do.	M	1904	84	S	.....	Mar. 28	Apr. 6	May 28	do	June 2	June 12	Sept. 27	Oct. 10
Do.	M	1904	87	S	1 to 5	Mar. 6	Apr. 2	May 17	May 27	May 23	June 9	Sept. 27	Oct. 17
Couderc, No. 704.	M	1904	90	S	.....	Mar. 6	Apr. 10	May 22	June 15	May 16	do	Sept. 20	Oct. 17
Do.	M	1904	79	S	.....	Mar. 25	Mar. 25	May 12	do	June 13	do	Sept. 20	Oct. 8
Do.	M	1904	73	S	1 to 3	Mar. 5	Mar. 27	June 1	June 17	May 23	June 12	Sept. 20	Oct. 8
Do.	S	1904	89	S	.....	Mar. 12	Apr. 15	May 26	June 15	May 31	June 20	do	Oct. 13
Couderc, No. 3701: Vin. X Rup.	Cx	1907	94	S	.....	Mar. 16	Apr. 3	June 1	June 10	June 5	June 16	Sept. 26	Oct. 4
Do.	G	1904	93	S	.....	Mar. 3	Mar. 17	May 15	do	May 19	do	Sept. 25	Oct. 7
Do.	Li	1904	97	S	.....	Mar. 12	Apr. 5	May 28	June 4	May 29	June 9	Sept. 15	Sept. 30
Do.	M	1904	88	S	.....	Mar. 28	do	May 23	June 1	May 2	do	Sept. 15	Oct. 8
Do.	M	1904	96	S	1 to 4	Mar. 20	Mar. 30	May 16	June 3	May 21	do	Sept. 25	Oct. 9
Do.	S	1904	92	S	.....	Mar. 11	Apr. 5	May 30	do	June 8	do	Sept. 24	Oct. 7
Couderc, No. 1401: Rup. X Vin.	O	1907	89	S	2 to 4	Mar. 20	Apr. 2	May 20	May 23	May 28	June 9	Sept. 22	Oct. 8
Couderc, No. 28 X No. 112: Vin. X Rup.	Cx	1907	94	S	.....	Mar. 16	Apr. 20	June 4	June 8	June 8	June 13	Sept. 26	Oct. 3
Do.	F	1904	89	S	.....	Mar. 10	Mar. 20	May 16	May 16	May 20	May 22	Sept. 5	Sept. 20
Do.	G	1904	96	S	.....	Mar. 11	Mar. 23	May 16	June 15	do	June 21	Sept. 20	Sept. 30
Do.	Li	1904	91	S	.....	Mar. 14	Apr. 5	May 24	June 8	May 29	June 14	Sept. 15	Sept. 30
Do.	L	1904	96	S	.....	Mar. 12	Mar. 30	May 8	May 25	May 12	June 30	Sept. 24	Sept. 30
Do.	M	1904	83	S	.....	Mar. 23	Apr. 4	Apr. 20	May 30	Apr. 30	June 10	Oct. 8	Oct. 8

Do.	1904	99	s	2 to 4	Mar. 21	Apr. 1	May 17	May 26	May 23	May 29	Sept. 25	Oct. 5
Do.	1904	89	s	.....	Mar. 10	...do...	May 31	June 15	June 5	June 20	Sept. 24	Oct. 14
Coudere, No. 71-06: Rup. X (Lins. X Vin.)	1907	82	s	2 to 3	Mar. 23	Mar. 27	May 17	June 8	May 21	June 14	Sept. 25	Oct. 10
Coudere, No. 71-20: Rup. X (Lins. X Vin.)	1907	85	s	2 to 5	...do...	Mar. 25	...do...	June 6	...do...	June 11	Sept. 21	Oct. 8
Coudere, No. 74-17: Complex Hybrid.	1907	86	s	1 to 3	Mar. 24	Apr. 1	May 23	May 28	June 1	June 5	Oct. 6	Oct. 10
Coudere, No. 82 X 32: Complex Hybrid.	1907	91	c, s	.....	Mar. 25	Apr. 10	May 2	June 12	May 9	June 17	Sept. 25	Do.
Do.	1904	90	s	.....	Mar. 15	Mar. 22	May 15	May 25	May 21	June 1	Sept. 1	Sept. 19
Do.	1904	95	s	.....	Mar. 2	Mar. 25	May 23	June 1	May 27	.....	Sept. 20	.....
Do.	1904	88	s	.....	Mar. 15	Apr. 5	May 24	June 10	May 29	.....	Sept. 15	Sept. 23
Do.	1904	91	s	.....	Mar. 26	...do...	June 9	June 18	May 22	.....	Sept. 28	Oct. 4
Do.	1904	94	s	.....	Mar. 16	...do...	May 28	June 10	May 26	June 16	Sept. 22	Oct. 10
Do.	1904	90	s	.....	Mar. 12	Apr. 7	May 28	June 30	June 2	July 3	Sept. 30	Oct. 14
Coudere, No. 84 X 61: (Vin. X Rup.) X Vin.	1907	82	s	.....	Mar. 17	Apr. 2	May 26	June 4	June 8	June 11	Sept. 20	Oct. 4
Do.	1907	87	s	.....	Mar. 10	Apr. 8	May 20	May 26	May 30	May 31	Sept. 15	Sept. 23
Do.	1904	59	s	.....	Mar. 11	Mar. 20	May 12	May 16	May 20	June 12	Sept. 8	Sept. 20
Do.	1904	72	s	.....	Mar. 5	Mar. 16	May 16	June 8	...do...	June 14	Sept. 20	Oct. 8
Do.	1904	66	s	.....	Mar. 10	Mar. 25	May 26	June 10	...do...	June 12	Sept. 20	Oct. 1
Do.	1907	69	s	.....	Mar. 3	Mar. 26	May 12	May 29	May 17	June 4	Sept. 24	Oct. 4
Do.	1904	72	s	.....	Mar. 29	Apr. 1	Apr. 26	June 9	Apr. 30	June 19	Sept. 26	Oct. 9
Do.	1904	37	s	2 to 4	Mar. 20	Mar. 30	May 18	June 10	May 23	June 16	Sept. 27	Oct. 2
Do.	1904	72	s	.....	Mar. 13	May 26	June 1	June 18	June 23	.....	Sept. 24	Oct. 17
Coudere, No. 85 X 113: (Vin. X Rup.) X Vin.	1907	86	s	2 to 4	Mar. 24	Apr. 1	May 31	June 1	June 3	June 20	Sept. 23	Oct. 10
Coudere, No. 87 X 115: Vin. X (Rup. X Vin.)	1907	89	s	.....	Mar. 16	Apr. 5	June 1	June 18	June 5	June 23	Sept. 15	Sept. 19
Do.	1907	83	s	.....	Mar. 18	Apr. 1	May 6	May 14	May 10	June 5	Sept. 5	Sept. 23
Do.	1904	91	s	.....	Mar. 12	Mar. 20	May 15	May 25	May 25	May 29	Aug. 21	Sept. 19
Do.	1907	92	s	.....	Mar. 2	Mar. 25	May 16	June 3	May 20	June 12	Sept. 23	Oct. 10
Do.	1907	88	s	.....	Mar. 9	Mar. 30	May 28	June 18	May 29	June 22	Sept. 23	Oct. 1
Do.	1904	93	s	.....	Mar. 27	Apr. 3	Apr. 25	June 9	Apr. 29	June 23	Sept. 24	Oct. 7
Do.	1904	88	s	1 to 2	Mar. 18	Apr. 1	May 29	June 7	May 23	June 12	Sept. 26	Oct. 9
Do.	1907	88	s	.....	Mar. 12	...do...	May 29	June 22	May 2	June 27	Sept. 24	Oct. 17
Coudere, No. 124 X 30: Vin. X (Rup. X Vin.)	1907	87	s	.....	Mar. 7	Mar. 28	May 10	May 25	...do...	May 29	Sept. 25	Sept. 17
Do.	1904	87	s	.....	Mar. 10	Mar. 25	May 14	May 24	May 20	May 29	Sept. 5	Sept. 19
Do.	1904	90	s	.....	Mar. 2	Mar. 30	May 11	June 15	May 25	June 30	Sept. 9	Oct. 5
Do.	1904	91	s	.....	Mar. 13	Apr. 3	May 12	June 14	May 18	...do...	Sept. 22	Sept. 24
Do.	1904	91	s	.....	Mar. 14	Apr. 1	...do...	May 29	May 16	June 3	Sept. 24	Do.
Do.	1904	82	s	.....	Mar. 28	Apr. 2	May 25	June 1	Apr. 29	June 20	Sept. 25	Oct. 8
Do.	1904	89	s	1 to 3	Mar. 18	Mar. 27	May 17	June 5	May 24	June 10	Sept. 27	Oct. 10
Do.	1904	86	s	.....	Mar. 12	Apr. 1	May 22	June 12	May 27	June 17	Sept. 20	Sept. 25
Coudere, No. 132-11: Complex Hybrid.	1907	85	s	1 to 3	May 24	Mar. 25	May 26	June 3	May 30	June 9	Sept. 27	Oct. 30
Coudere, No. 199-88: Vin. X (Rup. X Vin.)	1907	78	s	1 to 2	Mar. 25	...do...	...do...	May 31	May 24	June 4	Sept. 25	Oct. 5
Coudere, No. 241-125: Vin. X (Rup. X Vin.)	1907	87	s	2 to 4	Mar. 27	Mar. 28	...do...	June 6	May 30	June 13	Sept. 24	Oct. 8

TABLE X.—Relative behavior and value for different purposes of improved native American and Franco-American varieties of grapes growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and parentage.	Experiment vineyard.	Year planted.	Growth rating.	How pruned.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
						Early season.	Late season.	Early season.	Late season.	Early season.	Late season.	Early season.	Late season.
I			4	c	6	7	8	9	10	11	12	13	14
Coudere, No. 267-27; Complex Hybrid.	O	1907	<i>Per ct.</i> 88	s	2 to 3	Mar. 21	Mar. 24	May 24	May 30	May 27	June 5	Sept. 30	Oct. 15
Coudere, No. 272-60; Complex Hybrid.	O	1907	90	s	1 to 4	do.	Apr. 3	May 26	May 29	May 31	June 4	Sept. 22	Oct. 8
Delaware: Lab. X Bourg. X Vin.	F	1904	52	s	do.	Mar. 6	Mar. 30	May 10	May 20	May 15	May 28	Aug. 5	Sept. 20
Diamond: Lab. X Vin.	Gi	1905	80	s	do.	Mar. 10	Apr. 8	May 9	May 21	May 14	May 25	Aug. 29	Sept. 10
Do.	F	1905	69	s	do.	Mar. 7	Apr. 1	do.	May 17	May 15	May 22	Sept. 19	Sept. 8
Diana: Lab. X Vin. X Aest.	O	1905	66	s	2 to 3	Mar. 20	Apr. 6	May 19	May 31	May 23	June 4	Sept. 8	Sept. 10
Do.	Gi	1905	84	s	do.	Mar. 11	Apr. 3	May 9	May 21	May 13	May 25	Sept. 11	Sept. 19
Do.	O	1905	86	s	2 to 4	Mar. 14	Apr. 1	May 24	May 31	May 28	June 2	Sept. 8	Oct. 9
Dutchess: Lab. X Vin. X Aest.	Cx	1906	80	s	do.	Mar. 17	Apr. 6	Apr. 26	June 8	May 3	June 14	Sept. 10	Sept. 26
Do.	F	1905	69	s	do.	Mar. 6	Mar. 13	May 10	May 16	May 20	May 25	Aug. 23	Sept. 5
Do.	L	1905	88	s	do.	Mar. 9	Mar. 30	May 20	June 1	May 25	June 6	Sept. 24	Oct. 3
Do.	O	1905	91	s	1 to 1	Mar. 12	Apr. 1	May 19	June 7	May 24	June 12	Sept. 9	Oct. 16
Do.	S	1905	88	s	do.	Mar. 15	Apr. 7	May 25	June 18	May 30	June 23	Sept. 20	Oct. 16
Elvira: Rip. X Lab.	Gi	1905	79	s	do.	Mar. 10	Apr. 3	May 20	May 21	May 25	May 26	Sept. 1	Sept. 22
Do.	F	1904	83	s	do.	Mar. 7	Apr. 7	May 8	May 14	May 12	May 13	Aug. 21	Sept. 21
Do.	L	1904	90	c, s	do.	Mar. 14	Apr. 29	May 9	May 22	May 11	May 26	Sept. 24	Sept. 27
Do.	O	1904	61	s	2 to 3	Mar. 15	Mar. 29	May 2	May 27	May 5	May 30	Oct. 7	Oct. 7
Fern Munson: Lins. X (Vin. X Lab.)	Cx	1910	91	c, s	do.	Mar. 20	Apr. 2	Apr. 25	June 12	Apr. 30	June 17	Sept. 20	Oct. 4
Do.	O	1903	86	s	3 to 6	Mar. 16	Apr. 3	Apr. 21	June 2	May 26	June 7	Sept. 20	Oct. 1
Do.	S	1904	88	s	do.	do.	do.	May 29	June 18	June 1	June 23	Sept. 24	Oct. 16

Gold Coin: Aest. X Lab.	1904	F	60	s	.....	Mar. 23	Apr. 8	May 12	May 30	May 20	June 6	Sept. 5	Sept. 19
Do.	1904	G	67	s	.....	Mar. 7	Apr. 5	May 18	June 14	June 18	.....	Sept. 20	Oct. 7
Do.	1904	O	79	s	3 to 4	Mar. 16	Apr. 8	May 30	June 1	June 3	June 15	Sept. 25	Oct. 16
Do.	1904	S	85	s	.....	Mar. 10	Apr. 12	May 28	June 18	June 1	June 23	Sept. 24	.....
Governor Ross: Lab. X Vin.	1904	Gi	88	s	.....	Mar. 20	Apr. 8	May 20	June 3	May 25	June 10	Sept. 18	.....
Herbement: Bourq.	1906	Cx	92	c, s	.....	Mar. 18	Apr. 3	Apr. 21	June 18	Apr. 28	June 24	Sept. 25	Oct. 4
Do.	1905	Gi	84	s	.....	Mar. 10	Apr. 5	May 26	May 31	May 29	May 31	Sept. 19	Sept. 30
Do.	1904	M	87	s	.....	Mar. 9	Apr. 1	Apr. 30	May 13	May 4	May 27	Sept. 26	Oct. 8
Do.	1903	O	84	s	2 to 3	Mar. 22	.....	May 22	June 5	May 27	June 9	.....	Oct. 10
Do.	1904	S	78	s	.....	Mar. 12	Mar. 25	May 25	.....	June 8	June 11	.....	.....
Herbert: Lab. X Vin.	1905	F	70	s	.....	Mar. 5	Mar. 10	May 1	May 28	May 20	.....	Aug. 25	Sept. 10
Do.	1905	F	87	s	.....	Mar. 14	Apr. 1	May 1	May 28	May 22	.....	Oct. 9	.....
Hexamer: Lins. X (Lab. X Vin.)	1905	F	85	.....	.....	Mar. 9	Apr. 5	May 15	May 20	May 19	May 26	Sept. 9	Sept. 17
Do.	1905	O	89	s	2 to 4	Mar. 15	Apr. 6	May 17	June 12	May 22	June 18	Sept. 8	Oct. 15
Husmann: Lins. X (Vin. X Lab.)	1906	O	73	s	2 to 3	.....	Apr. 2	May 19	June 8	May 24	June 14	Sept. 7	Oct. 6
Imperial: Vin. X Lab.	1905	Gi	91	c, s	.....	.....	Apr. 1	May 26	June 6	May 30	June 12	Sept. 25	.....
Isabella: Lab. X Vin.	1906	Cx	91	s	.....	Mar. 19	Mar. 31	Apr. 30	June 5	May 6	June 10	Sept. 15	Oct. 2
Do.	1905	Gi	73	s	.....	Mar. 10	Apr. 15	May 5	May 23	May 14	May 26	.....	Sept. 20
Do.	1905	F	90	s	.....	Mar. 5	Mar. 25	May 5	May 13	May 15	May 19	Sept. 12	.....
Do.	1903	G	91	s	.....	Mar. 6	Mar. 18	May 5	June 3	May 21	June 9	.....	.....
Do.	1905	L	88	s	.....	Mar. 9	Apr. 1	May 8	May 25	May 11	May 28	Sept. 25	.....
Do.	1903	M	81	s	.....	Mar. 25	Apr. 3	May 28	June 5	June 1	June 10	.....	.....
Do.	1905	O	91	s	1 to 5	Mar. 16	Apr. 1	May 15	May 26	May 21	June 30	.....	Oct. 17
Do.	1905	S	97	c, s	.....	Mar. 10	Apr. 30	May 20	June 10	May 24	June 15	Sept. 24	.....
Jaeger: Lins. X Bourq.	1904	F	88	s	.....	Mar. 15	Apr. 3	May 14	May 22	May 27	May 27	Sept. 5	Sept. 19
Do.	1904	G	87	s	.....	Mar. 4	Apr. 5	May 20	June 3	May 28	June 12	Sept. 20	Sept. 25
Do.	1904	L	70	s	.....	Mar. 20	Apr. 6	May 12	May 20	May 10	May 24	.....	.....
Do.	1903	O	79	s	1 to 3	Mar. 25	Apr. 2	May 28	June 5	June 3	June 17	Sept. 25	.....
Jefferson: Lab. X Vin.	1906	C	80	s	.....	Mar. 31	Apr. 16	May 30	June 3	.....	June 8	.....	Oct. 4
Do.	1905	O	69	s	1 to 3	Mar. 24	Apr. 1	May 16	May 28	May 22	May 31	Sept. 23	.....
Kiowa: Lins. X Bourq.	1903	F	55	s	.....	Mar. 10	Mar. 12	Apr. 18	May 3	May 5	May 12	Sept. 27	.....
Do.	1903	O	86	s	2 to 3	Mar. 24	Apr. 5	May 28	June 7	June 3	June 12	.....	.....
Lampasas: Lab. X Aest.	1908	F	91	c, s	.....	Mar. 10	Mar. 18	May 8	May 15	May 15	.....	.....	.....
Laussel: Lins. X (Lab. X Aest.)	1904	F	27	s	.....	Mar. 12	Mar. 25	May 5	May 17	May 23	.....	Sept. 19	.....
Lenoir: Bourq.	1906	Cx	93	c, s	.....	Mar. 23	Apr. 2	June 9	June 12	June 14	June 17	Sept. 10	Sept. 23
Do.	1905	Gi	98	s	.....	Mar. 18	Mar. 28	May 25	May 30	May 30	June 5	Sept. 20	Sept. 20
Do.	1904	F	79	s	.....	Mar. 14	Mar. 20	May 20	May 15	May 20	June 5	Sept. 8	Sept. 12

Missouri Riesling: Rip. X Lab.	1904 L	83	s	.....	Mar. 13	Apr. 1	May 8	May 17	May 18	May 22	Sept. 5	Sept. 19
Do.	1904 L	82	s	.....	Mar. 14	Apr. 3	May 12	May 28	May 12	June 1	Sept. 24	Sept. 25
Do.	1904 O	70	s	1 to 3	Mar. 14	Apr. 3	May 12	May 27	May 17	May 31	Sept. 20	Oct. 5
Mrs. Munson: Lins. X Bourq.	1905 O	80	s	3 to 5	Mar. 12	Apr. 6	May 19	June 15	May 23	June 22	Sept. 22	Oct. 1
Muench: Lins. X Bourq.	1904 O	87	s	.....	Mar. 22	Apr. 1	May 18	May 30	May 23	June 6	Sept. 6	Sept. 27
Do.	1903 O	92	s	3 to 4	Mar. 20	do.	May 20	June 1	May 25	do.	Sept. 25	Sept. 27
Niagara: Lab. X Vin.	1906 Cx	88	s	.....	Mar. 19	Apr. 5	May 3	do.	May 12	June 7	Sept. 5	Oct. 4
Do.	1905 F	71	s	3 to 7	Mar. 7	Apr. 1	May 6	May 14	do.	May 19	Aug. 24	Oct. 26
Do.	1905 O	89	s	1 to 3	Mar. 13	Mar. 25	May 16	May 27	May 20	June 21	Sept. 10	Sept. 21
Ollatato: (Vin. X Lab.) X (Lins. X (Vin. X Lab.))	1907 O	81	s	2 to 4	Mar. 20	Mar. 30	June 8	June 10	June 12	June 16	Sept. 8	.....
Pardes: Vin. X Rup.	1907 Cx	94	s	.....	Mar. 19	Apr. 3	Apr. 27	June 5	May 2	June 11	Sept. 25	Oct. 4
Do.	1905 Gl	98	s	.....	Mar. 8	Mar. 25	May 20	May 21	May 21	May 25	Sept. 19	Sept. 25
Do.	1904 F	89	s	.....	Mar. 5	Mar. 28	May 5	May 15	May 15	May 21	Sept. 8	Sept. 20
Do.	1904 Li	73	s	.....	Mar. 7	Mar. 25	May 10	May 28	May 16	June 16	Sept. 15	Sept. 28
Do.	1904 M	53	s	.....	Mar. 20	Mar. 29	June 6	June 12	June 11	.....	Sept. 25	Oct. 10
Do.	1904 O	93	s	2 to 4	Mar. 18	Mar. 25	May 15	May 28	May 20	June 3	Sept. 25	Oct. 9
Do.	1904 S	95	s	.....	Mar. 14	Mar. 27	May 26	June 10	May 31	June 14	Sept. 24	Oct. 14
Pierce: Lab. X Vin.	1905 L	88	s	.....	Mar. 11	Apr. 3	May 4	May 18	May 7	May 23	do.	Oct. 2
Do.	1905 M	85	s	.....	Mar. 27	Apr. 1	May 21	June 8	May 26	June 13	Oct. 6	.....
Do.	1905 S	92	s	.....	Mar. 14	Apr. 5	May 23	June 3	May 27	June 9	Sept. 30	.....
Rebecca: Lab. X Vin.	1905 F	63	s	.....	Mar. 9	Apr. 1	May 6	May 18	May 18	May 23	Aug. 25	Aug. 30
Do.	1905 M	81	s	.....	Mar. 28	Apr. 6	June 3	June 8	June 11	June 26	Oct. 4	.....
Do.	1905 O	69	s	1 to 3	Mar. 19	Apr. 3	May 12	May 24	May 16	May 29	Sept. 9	Oct. 10
Do.	1905 S	84	s	.....	Mar. 13	Apr. 5	May 28	June 15	June 1	June 18	Sept. 24	Oct. 16
Rönnel: Lab. X (Rip. X Vin.)	1904 F	84	s	.....	Mar. 9	Apr. 25	May 7	May 18	May 15	May 23	Aug. 10	Sept. 20
Do.	1904 L	86	s	.....	Mar. 18	Apr. 3	May 10	May 27	May 14	June 1	Sept. 24	Oct. 5
Do.	1907 S	89	s	.....	Mar. 12	Apr. 1	May 24	June 28	May 28	July 1	Oct. 17	.....
R. W. Munson: Lins. X (Lab. X Vin.)	1906 C	90	s	.....	Mar. 27	Apr. 8	May 8	May 20	May 7	June 4	.....	.....
Do.	1906 Cx	80	s	.....	Mar. 23	Apr. 5	May 1	June 10	May 9	June 15	.....	.....
Do.	1907 Gl	80	s	.....	Mar. 9	do.	May 18	May 26	May 18	May 31	Aug. 21	Sept. 15
Do.	1904 F	83	s	.....	Mar. 6	Apr. 1	May 22	do.	May 29	June 20	.....	.....
Do.	1904 C	81	s	.....	Mar. 4	Apr. 3	June 2	June 13	June 13	June 20	.....	.....
Do.	1904 Li	71	s	.....	Mar. 10	Apr. 3	June 3	June 18	May 17	May 23	.....	.....
Do.	1904 L	78	s	.....	Mar. 11	Apr. 3	June 8	June 14	May 17	June 23	.....	.....
Do.	1904 M	92	s	.....	Mar. 29	do.	June 8	June 14	May 24	June 14	Sept. 26	.....
Do.	1903 O	91	s	2 to 5	Mar. 22	do.	June 18	May 30	May 24	June 4	.....	.....
Do.	1904 S	85	s	.....	Mar. 13	Apr. 12	May 26	June 20	June 20	June 25	.....	.....

TABLE X.—*Relative behavior and value for different purposes of improved native American and Franco-American varieties of grapes growing on their own roots in eleven experiment vineyards in California—(Continued).*

Variety and parentage.	Experiment vineyard.	Year planted.	Growth rating.	How pruned.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
						Early season.	Late season.	Early season.	Late season.	Early season.	Late season.	Early season.	Late season.
1			4	5	6	7	8	9	10	11	12	13	14
Seibel, No. 1: Rup. X (Lins. X Vin.)	C	1907	<i>Per cl.</i> 93	s		Mar. 29	Apr. 13	May 2	May 20	May 27	June 8	Sept. 26	Oct. 15
Do.	Cx	1907	91	s		Mar. 19	Apr. 2	May 30	June 3	June 5	June 2	Sept. 16	Sept. 28
Do.	G	1905	94	s		Mar. 15	Apr. 1	May 20	May 25	May 25	May 31	Aug. 20	Sept. 15
Do.	F	1904	74	s		Mar. 11	do.	May 21	June 18	May 25	June 21	Sept. 24	Sept. 30
Do.	G	1904	90	s		Mar. 4	do.	May 13	June 15	May 20	June 20	Sept. 20	Oct. 3
Do.	L	1904	48	s		Mar. 14	Apr. 5	May 13	June 4	May 17	June 20	Sept. 20	Oct. 8
Do.	L	1904	89	s		Mar. 13	Apr. 1	May 13	June 15	May 20	June 20	Sept. 26	Oct. 3
Do.	M	1904	63	s		Mar. 27	Apr. 4	May 13	June 15	May 20	June 20	Sept. 26	Oct. 3
Do.	O	1904	86	s		Mar. 21	Mar. 30	May 13	June 15	May 20	June 20	Sept. 26	Oct. 3
Do.	S	1904	91	s		Mar. 16	Apr. 10	May 21	June 18	May 25	June 23	Sept. 28	Oct. 9
Do.	18	1907	86	s		Mar. 20	Apr. 1	May 15	June 1	May 20	June 5	Sept. 24	Oct. 12
Seibel, No. 2: Rup. X (Lins. X Vin.)	C	1910	93	s		Mar. 28	Apr. 6	May 16	May 27	May 21	June 1	Sept. 24	Oct. 5
Do.	Cx	1907	90	s		Mar. 24	do.	June 9	June 9	May 10	June 14	Sept. 24	Oct. 5
Do.	G	1905	92	s		Mar. 20	Mar. 30	May 20	May 27	May 24	June 4	Sept. 18	Sept. 25
Do.	F	1904	78	s		Mar. 10	Mar. 20	May 13	May 25	May 20	May 30	Aug. 23	Do.
Do.	G	1904	82	s		Mar. 6	Apr. 1	May 28	June 10	May 20	June 15	Sept. 23	Oct. 5
Do.	L	1904	81	s		Mar. 14	do.	May 19	June 3	May 22	June 25	Sept. 23	Oct. 5
Do.	L	1904	82	s		Mar. 12	Mar. 30	May 19	June 3	May 20	June 10	Sept. 23	Oct. 8
Do.	M	1904	85	s		Mar. 28	Apr. 6	May 26	do.	June 1	June 9	Sept. 23	Oct. 8
Do.	O	1904	82	s	2 to 4	Mar. 21	Mar. 25	do.	May 31	May 30	June 2	Sept. 28	Oct. 9
Do.	S	1904	82	s		Mar. 17	Apr. 1	do.	June 18	do.	June 27	Sept. 25	Oct. 12
Do.	18	1907	87	s		Mar. 15	Mar. 25	May 13	June 2	May 20	June 7	Sept. 25	Oct. 12
Seibel, No. 14: Rup. X (Lins. X Vin.)	C	1906	92	s		Mar. 21	Apr. 10	May 26	June 1	May 20	June 6	Sept. 5	Sept. 23
Do.	Cx	1906	95	s		Mar. 20	Apr. 5	May 4	June 12	May 11	May 17	Sept. 5	Sept. 23
Do.	G	1905	93	s		Mar. 9	Mar. 25	May 9	May 27	May 13	May 30	Sept. 19	Sept. 25
Do.	O	1904	84	s		Mar. 17	Apr. 1	May 19	May 29	May 24	June 3	Sept. 20	Oct. 9

Seibel, No. 29: Rup. × (Lins. × Vin.)	O	1907	88	S	2 to 4	Mar. 25	Apr. 12	June 1	June 15	June 5	June 20	Sept. 25	Oct. 15
Seibel, No. 38: Rup. × (Lins. × Vin.)	C	1906	93	S	.....	Mar. 27	Apr. 21	May 20	June 1	.....	June 7	.....	.....
Seibel, No. 60: Rup. × (Lins. × Vin. × Rup.)	O	1907	70	S	.....	Apr. 5	.....	May 29	June 8	June 2	June 12	.....	.....
Seibel, No. 70: Rup. × (Lins. × Vin. × Rup.)	O	1907	81	S	2 to 5	Mar. 19	Apr. 1	May 26	June 5	June 1	June 10	Sept. 25	Oct. 10
Seibel, No. 78: Rup. × (Lins. × Vin.)	O	1907	80	S	2 to 5	Mar. 26	Mar. 28	do.....	June 8	do.....	June 14	Sept. 23	Oct. 2
Seibel, No. 80: Rup. × (Lins. × Vin.)	O	1907	89	S	2 to 5	Mar. 24	do.....	May 21	May 30	May 25	June 5	Sept. 24	Oct. 7
Seibel, No. 128: Rup. × (Lins. × Vin.)	O	1907	83	S	2 to 4	do.....	Apr. 1	May 26	June 11	June 1	June 16	Sept. 21	Oct. 8
Seibel, No. 136: Rup. × (Lins. × Vin.)	O	1907	84	S	2 to 3	Mar. 21	Apr. 3	May 27	June 7	do.....	June 13	Sept. 23	Oct. 15
Seibel, No. 209: Rup. × (Lins. × Vin.)	O	1907	82	S	2 to 4	Mar. 25	Mar. 28	May 31	June 12	June 4	June 18	Sept. 24	Oct. 8
Seibel, No. 215: Rup. × (Lins. × Vin.)	C	1906	93	S	.....	Mar. 30	Apr. 10	May 16	June 3	May 21	June 9	.....	.....
Do. Do.	Gl	1905	76	S	2 to 4	Mar. 20	Mar. 30	May 23	.....	June 1	June 14	Sept. 13	Sept. 20
Seibel, No. 334: Rup. × (Lins. × Vin. × Rup.)	O	1907	86	S	2 to 5	Mar. 21	Apr. 3	May 26	June 9	.....	.....	Sept. 22	Oct. 27
Seibel, No. 1004: Rup. × (Lins. × Vin.)	O	1907	78	S	2 to 5	Mar. 24	Mar. 28	May 5	June 8	May 30	do.....	Sept. 23	Do.
Seibel, No. 1070: Rup. × (Lins. × Vin.)	O	1907	82	S	2 to 5	Mar. 16	Apr. 10	May 28	June 10	June 2	do.....	Sept. 22	Oct. 6
Seibel, No. 1077: Rup. × (Lins. × Vin.)	O	1907	86	S	2 to 5	Mar. 22	Apr. 2	May 27	do.....	June 1	do.....	Sept. 20	Oct. 9
Seibel, No. 2010: Rup. × (Lins. × Vin.)	O	1907	81	S	3 to 5	Mar. 26	Apr. 10	May 29	June 15	June 2	June 21	Sept. 29	Oct. 7
Seibel, No. 2029: Rup. × (Lins. × Vin.)	O	1907	82	S	2 to 5	Mar. 24	Mar. 30	May 24	June 3	May 28	June 8	Sept. 30	Oct. 15
Seibel, No. 2033: Rup. × (Lins. × Vin.)	O	1907	86	S	2 to 5	Apr. 8	.....	May 28	June 18	June 1	June 23	Sept. 24	.....
Seibel, No. 2043: Rup. × (Lins. × Vin.)	O	1907	85	S	2 to 3	Mar. 22	Mar. 24	May 24	June 5	May 28	June 10	Sept. 28	Oct. 10
Seibel, No. 2044: Rup. × (Lins. × Vin. × Rup.)	St	1910	69	S	.....	Mar. 5	Mar. 29	May 17	May 27	May 20	May 31	.....	.....
Seibel, No. 2036: Rup. × (Lins. × Vin. × Rup.)	O	1907	88	S	1 to 5	Mar. 24	Apr. 1	May 22	May 30	May 26	June 6	Sept. 23	Oct. 15
Shala: Lins. × (Rup. × Lab.)	O	1907	89	S	3 to 5	Mar. 26	do.....	May 26	do.....	May 30	June 3	Sept. 30	Oct. 9
Do. Winchell: Lab. × (Aest. × Vin.)	C	1903	90	S	.....	Mar. 31	Apr. 17	May 5	May 20	May 9	May 25	.....	.....
Wine King: (Aest. × Lab.) × (Lins. × Rup.)	O	1903	90	S	.....	Mar. 19	Apr. 5	May 19	June 2	May 23	June 7	.....	.....
Do.	O	1905	80	S	.....	Mar. 21	Apr. 2	June 3	June 7	June 5	June 12	.....	.....
Do.	C	1907	97	S	.....	Mar. 31	Apr. 8	May 4	May 30	May 9	June 4	.....	.....
Do.	O	1903	93	S	2 to 4	Mar. 16	Apr. 3	May 19	May 31	May 25	June 3	.....	.....

TABLE X.—*Relative behavior and value for different purposes of improved native American and Franco-American varieties of grapes growing on their own roots in eleven experiment vineyards in California—Continued.*

Variety and parentage.	Experiment vineyard.	Year planted.	Growth rating.	How pruned.	Nodes bearing fruit.	Growth-starting date.		Blossoming date.		Fruit-setting date.		Fruit-ripening date.	
						Early season.	Late season.	Early season.	Late season.	Early season.	Late season.	Early season.	Late season.
Worden: Lab.	C	1906	<i>Per ct.</i> 72 81 67 56 72 74 47 80	c, s	6	Mar. 30	Apr. 20	May 8	May 20	June 5	May 26	Sept. 20	Sept. 30
	Cx	1906				Mar. 25	Apr. 5	May 1	June 5	June 1	June 4	Aug. 29	Sept. 15
	F	1905				Mar. 15	do.	May 5	June 30	June 3	June 6	Sept. 20	Sept. 30
	G	1905				Mar. 5	Apr. 3	May 15	June 1	June 1	June 4	Sept. 20	Sept. 30
	L	1905				Mar. 11	Apr. 5	May 10	June 23	May 14	June 28	Sept. 20	Sept. 30
Wyoming Red: Lab.	M	1905	71	s	1 to 2	Mar. 26	Apr. 6	May 25	June 8	May 30	June 13	Sept. 9	Sept. 30
	M	1905				Mar. 18	Apr. 5	May 17	June 30	May 23	June 5	Sept. 9	Sept. 30
	O	1905				Mar. 11	Apr. 8	May 25	June 9	June 8	June 12	Sept. 9	Sept. 30
	S	1905				Mar. 7	Mar. 25	May 8	May 20	May 12	May 24	Aug. 25	Sept. 5
	F	1905				Mar. 2	Mar. 25	May 24	June 5	May 28	June 10	Aug. 25	Sept. 5
Xhite: (Lhs. × Rup.) × (Vin. × Lab.).	C	1907	80 61 76	s	2 to 3	Mar. 29	Apr. 17	May 2	May 10	May 7	May 20	Sept. 20	Oct. 1
	F	1903				Mar. 5	Mar. 25	May 10	May 15	May 15	do.	Sept. 20	Oct. 1
	O	1903				Mar. 16	Apr. 1	May 18	June 5	May 24	June 18	Sept. 20	Oct. 1

Variety and parentage.	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tar- taric, grams per 100 c. c.	Cluster.		Berry.			Use.	
	1909	1910	1911	1912	1913			Size.	Shape.	Com- pact or loose.	Size.	Shape.		Color.
1	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Agawam: Lab. X Vin.	2				1½	<i>Per ct.</i> 24.6	0.655	m	cy	c	m, l	r	r	s, st, t
Do.	3	4	¾			22.5	.6175		cy	c	m, l	r	r	s, st, t
Albania: Lins. X (Aest. X Lab. X Bourq.)	4					24.6	.4425	l	t	m	m	r	w	w, s, st, t
Alicante Ganzin: Vin. X Rup.	6	3			16	24.2	.8920	l	t	c	m	r	b	w
Alicante X Rupestris Terrace, No. 20:	50	8				25.2	.6913	s	cy	c	s	r	b	w
Do.	20	5	15			24.7	.5425	s	cy	c	s	r	b	w
Do.		1½	8	10		25.6	.86	s	cy	c	s	r	b	w
Amerbonte: Bourq. X (Lins. X Rup.)								l	t	m	s	r	r	w, s, t
Do.								l	t	m	s	r	r	w, s, t
Do.								l	t	m	s	r	r	w, s, t
Atoka: (Lins. X Rup.) X (Bourq. X Lab.)	10	6		2	2	28.8	.8022	l	t	m	s	r	r	w, s, t
Do.	8					24.9	.9155	l	t	m	s	r	r	w, s, t
Barry: Lab. X Vin.			1	1		25.5	.6525	m	cy	m	l	r	b	s, st, t
Do.						25.2	.7875	m	cy	m	l	r	b	s, st, t
Berkmans: Rip. X (Lab. X Bourq.)			¾	¾		25.5	.8588	m	cy	c	m	r	r	w, st, t
Do.			1			23	.825	l	cy	c	m	r	b	w, st, t
Big Extra: Lins. X (Lab. X Vin.)		¾		2		25.8	.8362	l	cy	c	m	r	b	w, st, t
Do.	8		2	16	1	22.4	.6631	l	cy	c	m	r	b	w, st, t
Do.			1		2½	22	.9825	l	cy	c	m	r	b	w, st, t
Do.			1			21	.8025	l	cy	c	m	r	b	w, st, t
Do.		¾		1		20.6	.9358	l	cy	c	m	r	b	w, st, t
Do.		2				23.2	1.2006	l	cy	c	m	r	b	w, st, t
Do.	10	5				22.9	.8075	l	cy	c	m	r	b	w, st, t
Do.		4			1	23.8	.8581	l	cy	c	m	r	b	w, st, t
Blondin: Bourq. X Aest.) X (Lins. X Lab.)	4	3	¾			22.6	.6617	l	cy	c	m	r	w	w, t
Do.	6		5			24.3	.5757	l	cy	c	m	r	w	w, t

TABLE X.—*Relative behavior and value for different purposes of improved native American and Franco-American varieties of grapes growing on their own roots in eleven experiment vineyards in California—Continued.*

Variety and parentage.	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tar- taric, grams per 100 c. c.	Cluster.		Berry.			Use.	
								Size.	Shape.	Com- pact or loose.	Size.	Shape.		Color.
	1909	1910	1911	1912	1913									
I	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Bourisquon X Rupestris, No. 601: Vin. X Rup.						<i>Per cl.</i>								
Do.	15		2	7½		25.5	1.0537	1	t	m	s	r	b	w
Do.	15	25	8	13		23.9	.7571	1	t	m	s	r	b	w
Do.			10		16	25.5	.8031	1	t	m	s	r	b	w
Do.			7	2		22.5	1.117	1	t	m	s	r	b	w
Do.				3		22	.9825	1	t	m	s	r	b	w
Do.	30	15	10	5		23.2	1.1381	1	t	m	s	r	b	w
Bourisquon X Rupestris, No. 603: Vin. X Rup.														
Do.	15	18	2	4		21.5	.737	1	t	m	s	r	b	w
Do.			10	4	23	21.3	.8155	1	t	m	s	r	b	w
Do.			4			21	1.2225	1	t	m	s	r	b	w
Do.				6		22	.9112	1	t	m	s	r	b	w
Do.		3		6		20.1	.94	1	t	m	s	r	b	w
Do.	20		6		24	21	.9187	1	t	m	s	r	b	w
Do.		4	3		16	23.6	.7631	1	t	m	s	r	b	w
Bourisquon X Rupestris, No. 109-4: Vin. X Rup.														
Do.			1			27	.93	1	t	m	s	r	b	w
Do.			4	6		20	.8437	1	t	m	s	r	b	w
Do.	15	20	10	13		27.1	.9693	1	t	m	s	r	b	w
Do.		1½	5	1		25	1.0858	1	t	m	s	r	b	w
Do.						26	.9525	1	t	m	s	r	b	w
Do.		3				23.2	1.1570	1	t	m	s	r	b	w
Do.	15					23.2	.6975	1	t	m	s	r	b	w
Do.		3	2		8	24.9	.9350	1	t	m	s	r	b	w
Bourisquon X Rupestris, No. 3907: Vin. X Rup.														
Do.			1½	4½		25	1.012	1	t	m	s	r	b	w
Do.			10½	8		24	.8962	1	t	m	s	r	b	w
Do.	20	20	10	8		25.2	.8846	1	t	m	s	r	b	w
Do.					9½	32	1.1250	1	t	m	s	r	b	w
Do.								1	t	m	s	r	b	w
Do.		5	2		5	24.4	.7631	1	t	m	s	r	b	w
Bourisquon X Rupestris, No. 4306: Vin. X Rup.														
Do.				2		25	1.02	m	cy	m	s	r	b	w
Do.	6		20			23.6	.9295	m	cy	m	s	r	b	w
Do.			1			22	1.005	m	cy	m	s	r	b	w
Do.	12					23.8	.75	m	cy	m	s	r	b	w

Bourisquon X Rupestris, No. 4308:

Vin. X Rup.	24.5	L. 113	m	cy	m	s	r	b	w
Do.	27	.8625	m	cy	m	s	r	b	w
Do.	25.6	.8625	m	cy	m	s	r	b	w
Do.	21.4	1.4275	m	cy	m	s	r	b	w
Do.	25.2	.78	m	cy	m	s	r	b	w
Brighton:	22.7	.705	1	t	m	m	r	r	s, st, t
Lab. X Vin.									
Brilliant:									
Lab. X (Vin. X Bourq.)									
Do.	4	.6355	m	cy	c	m	r	r	s, st, t
Do.	6	.5825	m	cy	c	m	r	r	s, st, t
Do.		.6	m	cy	c	m	r	r	s, st, t
Do.		.975	m	cy	c	m	r	r	s, st, t
Canada:									
(Rip. X Lab.) X Vin.									
Do.	15	.7031	m	cy	c	m	r	b	s, st, t
Do.		.7791	m	cy	c	m	r	b	s, st, t
Do.	15	.7800	m	cy	c	m	r	b	s, st, t
Do.		.8337	m	cy	c	m	r	b	s, st, t
Carignane X Rupestris, No. 404:									
Vin. X Rup.									
Do.	7	.8033	m	t	m	m	r	b	w
Do.		.7775	m	t	m	m	r	b	w
Do.	12	.8572	m	t	m	m	r	b	w
Do.	2	.887	m	t	m	m	r	b	w
Do.	6	.6337	m	t	m	m	r	b	w
Do.	25	.712	m	t	m	m	r	b	w
Do.									
Carignane X Rupestris, No. 501:									
Vin. X Rup.									
Do.		.645	m	t	m	m	r	b	w
Do.		.9012	m	t	m	m	r	b	w
Do.	15	.7462	m	t	m	m	r	b	w
Do.		.6	m	t	m	m	r	b	w
Carman:									
Lins. X (Vin. X Lab. X Bourq.)									
Do.	3	.5669	m	t	m	m	r	b	w, t
Do.	4	.6275	m	t	m	m	r	b	w, t
Castel, No. 1028:									
Rip. X Vin.									
Castel, No. 10002:									
(Lab. X Rup.) X Vin.									
Catawba:									
Lab. X Vin.									
Do.	5	.6100	m	cy	m	m	r	b	w
Do.	7	.5970	m	cy	m	m	r	b	w
Do.	1	.57	m	cy	c	m	r	r	w, st, t
Do.	3	.397	m	cy	c	m	r	r	w, st, t
Do.		.6	m	cy	c	m	r	r	w, st, t
Do.	1	.8925	m	cy	c	m	r	r	w, st, t
Do.		1.065	m	cy	c	m	r	r	w, st, t
Do.	8	.8255	m	cy	c	m	r	r	w, st, t
Do.		.697	m	cy	c	m	r	r	w, st, t
Do.	5	.23.5	m	cy	c	m	r	r	w, st, t
Centennial:									
Lab. X Aest.									
Do.	23	.9825	s	t	c	m	r	r	w, t
Do.	24.3	.6602	s	t	c	m	r	r	w, t
Do.	23.4	.7912	s	t	c	m	r	r	w, t
Champanel:									
Champ. X Lab.									
Do.	22.8	.78	m	cy	c	m	r	b	w, t

TABLE X.—Relative behavior and value for different purposes of improved native American and Franco-American varieties of grapes growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and parentage.	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tar- taric, grams per 100 c. c.	Cluster.			Berry.			Use.
								Size.	Shape.	Com- pact or loose.	Size.	Shape.	Color.	
	1909	1910	1911	1912	1913									
1	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Chasselas X Rupestris, No. 901: Vin. X Rup.	5 8		10			<i>Per ct.</i> 26.5 25	.6337 .7275	m m	cy cy	c c	m m	r r	b b	w w
Clarette Doré Ganzin: Vin. X Rup.	4	2		29 2		20.4 25.1	1.1437 .9825	l l	t t	l l	m m	r r	w w	w w
Do.				8	42	18.3	1.2255	l	t	l	m	r	w	w
Do.	60	20	13											
Clevener: Lab. X (Rip. X Aest.)					2	25	.7875	s	cy	c	s	r	b	w
Cloeta: (Lins. X Rup.) X (Lab. X Vin.)		4				22.9	.66	l	cy	l	m	r	b	w, t
Columbaud X Rupestris: Vin. X Rup.	10					21.9	.78	m	t	m	m	r	b	w
Lab.						24	.3975	m	cy	m	m, l	r	b	w, st, t
Do.				4		23	.3525	m	cy	m	m, l	r	b	w, st, t
Do.						22.4	.57	m	cy	m	m, l	r	b	w, st, t
Do.			‡			26	1.132	m	cy	m	m, l	r	b	w, st, t
Cornucopia: Vin. X Rip.	4					25	.825	l	cy	c	m	r	b	st, t
Do.						25	.8625	l	cy	c	m	r	b	st, t
Coudere, No. 101: Vin. X Rip.					5									
Do.						28.3	1.1275	s	cy	c	s	r	b	w
Do.	15	20	5	‡	24	24.4	.8344	s	cy	c	s	r	b	w
Do.			4	‡	12‡	21	.8675	s	cy	c	s	r	b	w
Do.		2	8			25.1	1.0225	s	cy	c	s	r	b	w
Do.		5	4			22.3	1.0916	s	cy	c	s	r	b	w
Do.	40	8	10	5	4‡	22	1.0355	s	cy	c	s	r	b	w
Do.		4	3		9	26.1	.9693	s	cy	c	s	r	b	w
Coudere, No. 201: Rip. X (Rup. X Vin.)					6	21	.8818	s	cy	c	s	r	b	w
Do.	15	20	8	15	23	24.2	.7935	s	cy	c	s	r	b	w
Do.			1	3	3	19	1.1300	s	cy	c	s	r	b	w
Do.		‡	7	‡		24	1.1193	s	cy	c	s	r	b	w

TABLE X.—Relative behavior and value for different purposes of improved native American and Praco-American varieties of grapes growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and parentage.	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tar- taric, grams per 100 c. c.	Cluster.		Berry.			Use.	
								Shape.	Com- pact or loose.	Size.	Shape.	Color.		
1909	1910	1911	1912	1913	19	20	21	22	23	24	25	26	27	28
1	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Couderc, No. 84 × 61—Continued. (Vin. × Rup.) × Vin.			2 3	1 10	3	<i>Pr. cl.</i> 20.6	.9275	m	t	m	m	r	b	w
Do.		$\frac{1}{2}$	3	2	.....	24	.7969	m	t	m	m	r	b	w
Do.		$\frac{2}{3}$	4	16	.....	23.8	.645	m	t	m	m	r	b	w
Do.		6	.....	.....	.....	21.5	1.077	m	t	m	m	r	b	w
Do.		15	.....	.....	.....	22.5	.715	m	t	m	m	r	b	w
Do.		6	.....	.....	6	26.5	.8468	m	t	m	m	r	b	w
Couderc, No. 85 × 113; (Vin. × Rup.) × Vin.	6	4	2 $\frac{1}{2}$	2 $\frac{1}{2}$	.....	23.7	.8156	m	cy	m	m	r	b	w
Couderc, No. 87 × 115; Vin. × (Rup. × Vin.)			1 2	3 4	.....	24	.57	l.	cy t	l	s	r	b	w
Do.	20	4	.....	34	.....	26	.6562	l.	cy t	l	s	r	b	w
Do.		.....	.....	1	9	20	.572	l	cy t	l	s	r	b	w
Do.		$\frac{1}{2}$	4	2 $\frac{1}{2}$	.....	23.8	.7975	l	cy t	l	s	r	b	w
Do.	6	.....	6	19	.....	24.7	.8925	l	cy t	l	s	r	b	w
Do.	35	10	13	6	.....	21.8	1.0125	l	cy t	l	s	r	b	w
Do.		6	.....	.....	22	21.7	.6224	l	cy t	l	s	r	b	w
Couderc, No. 124 × 30; Vin. × (Rup. × Vin.)	25	15	8	2 7	12	21.7	.7612	l	cy t	l	s	r	b	w
Do.		.....	.....	.....	.....	22.3	.877	m	cy	m	l	r	b	w
Do.		.....	.....	.....	.....	8	.9105	m	cy	m	l	r	b	w
Do.		3	7	4	11 $\frac{1}{2}$	19.5	.8937	m	cy	m	l	r	b	w
Do.		1 $\frac{1}{2}$	6	.....	.....	23	1.0744	m	cy	m	l	r	b	w
Do.		6	.....	.....	.....	23.3	.995	m	cy	m	l	r	b	w
Do.	40	5	14	17	.....	21.8	1.1655	m	cy	m	l	r	b	w
Do.		8	4	.....	28	21.8	.8868	m	cy	m	l	r	b	w
Couderc, No. 132-11; Complex Hybrid.	6	2	2	2	18	22.3	.9702	m	cy	m	l	r	b	w
Couderc, No. 199-88; Vin. × (Rup. × Vin.)		2	$\frac{1}{2}$	.....	.....	22.7	.5106	l	t	m	m	r	b	w, t
Couderc, No. 241-125; Vin. × (Rup. × Vin.)		1	.....	.....	3	26	.6632	m	t	m	m	r	b	w
Couderc, No. 267-27; Complex Hybrid.		3	2	$\frac{1}{2}$	10	29	.7162	m	cy	m	s	r	b	w
							.6262	m	cy	m	m	r	b	w

TABLE X.—Relative behavior and value for different purposes of improved native American and Franco-American varieties of grapes growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and parentage.	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tar- taric, grams per 100 c. c.	Cluster.			Berry.			Use.
								Size.	Shape.	Com- pact or loose.	Size.	Shape.	Color.	
	1909	1910	1911	1912	1913									
1	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Isabella: Lab. × Vin.		2	2	1		<i>Per ct.</i> 26	1.658	m	cy	c	m	r	b	st, t
Do.						18	.587	m	cy	c	m	r	b	st, t
Do.			$\frac{3}{4}$					m	cy	c	m	r	b	st, t
Do.				1 $\frac{1}{2}$		28	.72	m	cy	c	m	r	b	st, t
Do.								m	cy	c	m	r	b	st, t
Do.	3		1 $\frac{1}{2}$			23	.3037	m	cy	c	m	r	b	st, t
Do.			6		22	22	.7837	m	cy	c	m	r	b	st, t
Jaeger: Lins. × Bourq.	6		$\frac{1}{4}$		1 $\frac{1}{2}$	25	.6931	m	cy	c	s	r	b	w
Do.			$\frac{1}{4}$		3	23	1.027	m	cy	c	s	r	b	w
Do.								m	cy	c	s	r	b	w
Do.	3					24.9	.81	m	cy	c	s	r	b	w
Jefferson: Lab. × Vin.								m	cy	c	l	r	b	st, t
Do.	3	1			1	29	.3777	m	cy	m	l	r	b	w, t
Klova: Lins. × Bourq.								m	cy	m	l	r	b	w, t
Do.								s	cy	m	m	r	r	t
Lampasas: Lab. × Aest.	3					20.8	.66	m	cy	m	m	r	b	w
Do.								m	cy	c	m	r	b	w
Lausell: Lins. × (Lab. × Aest.)								l	t	l	s	r	b	w
Do.								l	t	l	s	r	b	w
Lenoir: Bourq.		2	2			23	.5625	l	t	l	s	r	b	w
Do.		5	5			29.2	.977	l	t	l	s	r	b	w
Do.	15	6	1	30	10	23.6	1.3334	l	t	l	s	r	b	w
Do.			2			29.2	.7375	l	t	l	s	r	b	w
Do.			2	2	9	22	.995	l	t	l	s	r	b	w
Do.			1 $\frac{1}{2}$			24	1.1212	l	t	l	s	r	b	w
Do.		1 $\frac{1}{2}$		18		24.9	1.1141	l	t	l	s	r	b	w
Do.		5		5 $\frac{1}{2}$		22	1.235	l	t	l	s	r	b	w
Do.	15	2				24	1.0575	l	t	l	s	r	b	w
Do.		6	2		4	23.8	.8493	l	t	l	s	r	b	w

Lindley: Lab. X Vin.	.....	2	1½	.....	26.4	.5000	m	cy	l	m	r	r	w, t
Do.	.....	.....	5	.....	22.5	.5512	m	cy	l	m	r	r	w, t
Do.	.....	.....	8	.....	23.1	.4500	m	cy	l	m	r	r	w, t
Louisiana: Do.	.....	.....	.....	.....	23.3	.5300	m	cy	l	m	r	r	w, t
Bourq.	.....	.....	.....	.....	.....	.....	s	cy	c	s	b	b	w, t
Lukfata: Do.	.....	.....	.....	.....	25.5	.7350	s	cy	c	s	b	b	w, t
Champ. X Lab.	.....	.....	.....	.....	30	.6325	s	cy	c	s	b	b	w, t
Do.	.....	.....	.....	.....	.....	.....	m	cy	c	m	b	b	t
Manito: (Lab. X Vin. X Bourq.) X (Lins. X Rup.)	.....	.....	.....	.....	20	.7275	m	cy	c	m	b	b	t
Marquette: Lins. X Bourq.	.....	.....	.....	.....	.....	.....	m	cy	c	m	b	b	t
Do.	.....	.....	.....	.....	.....	.....	m	cy	c	m	b	b	t
Do.	.....	.....	.....	.....	.....	.....	m	cy	c	m	b	b	t
Do.	.....	.....	.....	.....	.....	.....	m	cy	c	m	b	b	t
Do.	.....	.....	.....	.....	.....	.....	m	cy	c	m	b	b	t
Martha: Lab. X Vin.	.....	.....	.....	.....	23	.51	m	t	l	m	r	r	t
Missouri Riesling: Rip. X Lab.	.....	.....	.....	.....	23.9	.5791	s	cy	c	s	r	r	w
Do.	.....	.....	.....	.....	25.6	.6300	s	cy	c	s	r	r	w
Do.	.....	.....	.....	.....	25.5	.4900	s	cy	c	s	r	r	w
Mrs. Munson: Lins. X Bourq.	.....	.....	.....	.....	23.6	.6775	m	cy	l	m	r	r	t
Muench: Lins. X Bourq.	.....	.....	.....	.....	25.7	.6790	m	cy	c	s	b	b	w
Do.	.....	.....	.....	.....	23.9	.8662	m	cy	c	s	b	b	w
Niagara: Lab. X Vin.	.....	.....	.....	.....	26	.51	m	cy	m	l	r	r	w, st, t
Do.	.....	.....	.....	.....	23.8	.485	m	cy	m	l	r	r	w, st, t
Do.	.....	.....	.....	.....	25.6	.7275	m	cy	m	l	r	r	w, st, t
Oliatato: (Vin. X Lab.) X (Lins. X (Vin. X Lab.))	.....	.....	.....	.....	25.6	.8625	m	t	l	m	r	r	w, t
Pardes: Vin. X Rup.	.....	.....	.....	.....	23.5	.8925	m	cy	m	s	b	b	w
Do.	.....	.....	.....	.....	22.9	.825	m	cy	m	s	b	b	w
Do.	.....	.....	.....	.....	22.4	.65	m	cy	m	s	b	b	w
Do.	.....	.....	.....	.....	25.3	.9262	m	cy	m	s	b	b	w
Do.	.....	.....	.....	.....	22.5	.8612	m	cy	m	s	b	b	w
Do.	.....	.....	.....	.....	22.5	.8612	m	cy	m	s	b	b	w
Do.	.....	.....	.....	.....	23.8	.9725	m	cy	m	s	b	b	w
Do.	.....	.....	.....	.....	25.1	.8775	m	cy	m	s	b	b	w
Pierce: Lab. X Vin.	.....	.....	.....	.....	24.1	.6208	m	cy	c	l	b	b	st, t
Do.	.....	.....	.....	.....	21	.9825	m	cy	c	l	b	b	st, t
Do.	.....	.....	.....	.....	19.7	.9187	m	cy	c	l	b	b	st, t
Rebecca: Lab. X Vin.	.....	.....	.....	.....	24.6	.5137	m	cy	m	s	w	w	t
Do.	.....	.....	.....	.....	26	.75	m	cy	m	s	w	w	t
Do.	.....	.....	.....	.....	22.2	.4012	m	cy	m	s	w	w	t
Do.	.....	.....	.....	.....	23	.6244	m	cy	m	s	w	w	t

Do.....	3	3	7	25.5	1.1737	m	cy	l	l	r	b	w
Do.....	3	4	6	23.1	1.0991	m	cy	l	l	r	b	w
Do.....	2	6	3	23.5	1.115	m	cy	l	l	r	b	w
Do.....	50	4	3	24	1.0177	m	cy	l	l	r	b	w
Do.....	8	1	3	24	1.0177	m	cy	l	l	r	b	w
Do.....	8	1	3	24	1.0177	m	cy	l	l	r	b	w
Seibel, No. 14: Rup. X (Lins. X Vin.).....												
Do.....	1	1	8	29	.960	m	cy	l	l	r	b	w
Do.....	6	10	8	23	.7750	m	cy	l	l	r	b	w
Do.....	15	10	10	24	1.3325	m	cy	l	l	r	b	w
Seibel, No. 29: Rup. X (Lins. X Vin.).....	2	3	1	24	.8895	s	cy	c	s	r	b	w
Seibel, No. 38: Rup. X (Lins. X Vin.).....						s	cy	c	s	r	b	w
Seibel, No. 60: Rup. X (Lins. X Vin. X Rup.).....						s	cy	c	s	r	b	w
Seibel, No. 70: Rup. X (Lins. X Vin. X Rup.).....						s	cy	c	s	r	b	w
Seibel, No. 78: Rup. X (Lins. X Vin.).....	5	3	2	13	.9144	s	cy	c	s	r	b	w
Seibel, No. 80: Rup. X (Lins. X Vin.).....	4			6	.6212	m	cy	c	m	r	b	w
Seibel, No. 128: Rup. X (Lins. X Vin.).....	4	4		18	.6725	m	cy	c	m	r	b	w
Seibel, No. 136: Rup. X (Lins. X Vin.).....	11	2		8	.9335	m	t	m	m	r	b	w
Seibel, No. 156: Rup. X (Lins. X Vin.).....	2	1	1	31	.9518	m	t	m	m	r	b	w
Seibel, No. 209: Rup. X (Lins. X Vin.).....		1		9	.7912	m	t	m	m	r	b	w
Seibel, No. 215: Rup. X (Lins. X Vin.).....						m	cy	m	m	r	b	w
Do.....	6	10	3	22.3	.8375	m	cy	m	m	r	b	w
Do.....	2	4	25	24	.8250	m	cy	m	m	r	b	w
Seibel, No. 334: Rup. X (Lins. X Vin. X Rup.).....	2	1	6	25	1.150	l	cy	c	m	r	b	w
Seibel, No. 1004: Rup. X (Lins. X Vin.).....	4	4	1	23	.9555	l	cy	m	m	r	b	w
Seibel, No. 1070: Rup. X (Lins. X Vin.).....	5	5	3	23	.9593	l	cy	m	m	o	b	w
Seibel, No. 1077: Rup. X (Lins. X Vin.).....	1			6	.7275	m	cy	c	m	r	b	w
Seibel, No. 2010: Rup. X (Lins. X Vin.).....				21	.8487	s	cy	c	m	r	b	w
Seibel, No. 2029: Rup. X (Lins. X Vin.).....		1	2	23	1.155	s	cy	c	m	r	b	w
Seibel, No. 2033: Rup. X (Lins. X Vin.).....		1		27.4	.8812	l	cy	c	m	r	b	w
Seibel, No. 2043: Rup. X (Lins. X Vin.).....	3	2	3	12	.8812	l	cy	c	m	r	b	w
Seibel, No. 2044: Rup. X (Lins. X Vin. X Rup.).....						s	cy	c	m	r	b	w
Seibel, No. 2056: Rup. X (Lins. X Vin. X Rup.).....	3	1	2	6	1.1535	s	cy	c	m	r	b	w
Seibel, No. 2056: Rup. X (Lins. X Vin. X Rup.).....		1		6	.9750	s	cy	c	m	r	b	w

TABLE X.—Relative behavior and value for different purposes of improved native American and Franco-American varieties of grapes growing on their own roots in eleven experiment vineyards in California—Continued.

Variety and parentage.	Weight of fruit per vine (pounds).					Sugar, Balling scale.	Acid, as tar- trates, grams per 100 c. c.	Cluster.			Berry.			Use.
	1909	1910	1911	1912	1913			Size.	Shape.	Com- pact or loose.	Size.	Shape.	Color.	
1	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Shah: Lins. × (Rup. × Lab.).....						<i>Per ct.</i>		1	cy	c	1	r	b	w, t
Do.....								1	cy	m	1	r	b	w, t
Winchell: Lab. × (Aest. × Vin.).....								1	t	1	s	r	w	w, t
Wine King: (Aest. × Lab.) × (Lins. × Rup.).....								1	cy	c	m	r	b	w
Do.....						22.8	0.9000	1	cy	c	m	r	b	w
Worden: Lab.....								m	cy	1	m	r	b	t
Do.....						27	.4850	m	cy	1	m	r	b	t
Do.....	3		$\frac{3}{4}$	$\frac{1}{4}$		23.3	.5325	m	cy	1	m	r	b	t
Do.....			$\frac{3}{4}$	$\frac{1}{4}$				m	cy	1	m	r	b	t
Do.....								m	cy	1	m	r	b	t
Do.....								m	cy	1	m	r	b	t
Do.....						20.9	.5775	m	cy	1	m	r	b	t
Do.....								m	cy	1	m	r	r	t
Wyoming Red: Lab.....	1 $\frac{1}{2}$	$\frac{1}{2}$	1			24.9	.5300	m	cy	1	m	r	r	t
Do.....								m	cy	1	m	r	r	t
Do.....								m	cy	1	m	r	r	t
Do.....								m	cy	1	m	r	r	t
Do.....								m	cy	1	m	r	r	t
Do.....						24.8	.6150	m	cy	1	m	r	r	t
Do.....								m	cy	1	m	r	r	t
Xinta: (Lins. × Rup.) × (Vin. × Lab.).....								1	cy	m	m	r	b	w
Do.....								1	cy	m	m	r	b	w
Do.....			4			23	.9375	1	cy	m	m	r	b	w

CONCLUSIONS AND SUGGESTIONS.

Varying soil, climatic, and other conditions complicate the successful establishment of vineyards on resistant stocks.

The adaptability of varieties to soil, climatic, and other conditions can be closely forecasted, but congeniality has to be determined by actual test.

The best results are obtained where the scion and stock are congenial and both are suited to all the conditions of the environment.

When both scion and stock varieties are suited to the conditions but do not thrive, congeniality is probably lacking.

The ideal vine is one having a most resistant root which is congenial to a top that produces the best fruit abundantly.

Different species used as stocks with the same variety grafted on them (Table VII) may increase or diminish its vigor and productiveness; increase or diminish the quality, size, and appearance of the fruit; cause it to ripen earlier or later; and bring about results varying from perfect success to almost complete failure.

Extensive saccharine and acid determinations made (Table VII) of varieties grafted on resistant stocks and contrasted with the congeniality and growth ratings made of the same vines the same season show a close correspondence between these important chemical constituents of the fruit and the congeniality of graft and stock. Similar growth ratings of a variety grafted on various stocks are found to be accompanied by fairly definite percentages of sugar and acid. The congeniality of the variety to the stock materially affects the resistant qualities of the stock.

The quantity and quality of the fruit are usually in opposition on the soils and vines producing most abundantly; the fruit is usually not of as much value per given unit as it is on vines that are relatively less productive.

Most vine varieties making perfect growth on resistant stocks are found to yield heavier crops than the same variety when grown on its own roots.

The best results can be obtained only when the varieties are placed under soil, climatic, and other conditions to which they are adapted and by using the methods of pruning, training, and culture best suited to each one.

A number of the new grape introductions of the Department of Agriculture are proving to be superior to the varieties that are now commercially grown for certain purposes.

The relative rooting qualities of resistant varieties are an important consideration in the cost of establishing resistant vineyards.

Some stocks are suited for bench grafting, while others are especially valuable for vineyard grafting.

Cuttings of many hybrids root easily, although the cuttings from one of the parents may be hard to root.

Where conditions are not suited to a given species, they are often well adapted to hybrids of that species with some other species.

As cuttings of *Monticola*, *Berlandieri*, *Aestivalis*, *Linsecomii*, *Bicolor*, and *Candicans* (Pls. VI, VII, and VIII) are hard to root, they should be rooted in the nursery and grafted there, or planted in the vineyard and grafted afterwards.

Riparia cuttings root easily and are excellent stocks well suited for vineyard and bench grafting, but they are adapted to but few California soils. Soils in which *Riparia* varieties thrive usually produce large crops of only fair quality.

Rupestris cuttings root and graft easily and are best adapted to bench grafting. When so used the dormant eyes should be cut out of the stock. Many varieties are not congenial to *Rupestris*, and their fruit is usually somewhat later in ripening than when grown on some other stock.

In most instances *Riparia*, *Berlandieri*, *Champini*, and *Aestivalis* stocks (Pl. VI, VII, and VIII) are congenial to *Vinifera* varieties. Their fruitfulness is increased and the time of ripening hastened in comparison with the same varieties grown on other stocks.

Some of the hybrid resistant-stock varieties are making enviable records as stocks under California conditions.

Where all the qualities desired can not be found in a hybrid, a complex hybrid—that is, a hybrid of hybrids—may yield the desired results.

A grower of *Vinifera* grapes should decide before locating his vineyard what varieties he desires to grow, and then choose soil and other conditions suited to such varieties. He should know whether stocks are to be established in the vineyard and grafted afterwards or whether the plantings are to be of bench or nursery grafts. He should then select the resistant varieties best suited to the purpose and conditions and which at the same time are congenial to the varieties he intends to grow. He should familiarize himself with all the operations necessary in establishing a resistant vineyard.

The amount of money practically thrown away in the reestablishment of *Vinifera* vineyards in this country since the first appearance of *phylloxera* in them can not be even approximately estimated.

The direct causes of this waste of money have been due to lack of information and the fact that there was no source from which data could be obtained. This has resulted in the taking of chances by the growers in planting nonresistants, or in using the wrong resistants, or in using resistants which were not congenial to the varieties they were growing. Other causes for this waste have been the purchase of bench grafts on resistant stocks not true to

name and the lack of proper care and management of resistant vineyards, such as allowing roots to grow from Vinifera tops grown on resistant stocks. These mistakes have delayed the general use of resistant. There should be no further delay of this kind. The Department of Agriculture is now prepared and will be glad to give information of value along all these lines.