Circular 87 January, 1933

Connecticut Agricultural Experiment Station
New Haven

TESTING VEGETABLES FOR CONNECTICUT

RESULTS FOR 1932

LAWRENCE C. CURTIS

The vegetable trials conducted at Windsor and Mount Carmel as a part of the vegetable breeding program, serve an additional purpose: To indicate to the grower the most promising vegetables worthy of trial on his own farm and to furnish the seed producer information that may help him to determine the best seeds for distribution in this territory.

We have found that the difference between two strains of a vegetable variety offered by two separate seed companies may be greater that the difference between two varieties. Our task, then, is to test seed from many sources in order that the best source for particular strains may be determined.

We also test the new varieties that are constantly being developed and introduced into various sections of the country for their adaptability to Connecticut climate and soils. Too often these new strains and varieties have been developed for a particular purpose, such as disease resistance, or for a certain locality. Although disease resistance is a desirable feature, other characteristics—quality, productivity, earliness in yield—are also necessary for a marketable vegetable. For example, disease resistant lettuce developed for the Imperial Valley in California may not form a satisfactory head under conditions in Connecticut. The Break O' Day tomato that was developed for wilt resistance and earliness in the south does not color properly in New England. Consequently, if the new variety proves itself to be lacking in all but resistance, it must be discarded unless it shows possibilities as plant breeding material.

In all of the trials the cultural practices for each strain and variety were identical. In each case except tomatoes, peppers and celery,

TABLE 2. CROSBY'S EGYPTIAN BEETS, WINDSOR

Strain	Medium size	Shape				Inside color				Indistinct zones
		Globe	Oblate	Top shape	Flat	Dark	Medium	Light	Vermillion	
Early Wonder L7.11M Associated Seed Growers	49	..	..	100	..	52	44	4	..	86
Crosby's Egyptian Francis C. Stokes Seed Co.	60	4	..	96	..	32	59	9	..	71
Crosby's Egyptian 320 Joseph Harris Seed Co.	61	21	5	74	..	28	60	12	..	63
Early Wonder T4.10M Associated Seed Growers	63	6	4	89	..	40	56	4	..	66
Crosby's Egyptian T1.5M Associated Seed Growers	51	1	19	80	..	37	50	13	..	78
Crosby's Egyptian 320 Joseph Harris Seed Co.	53	5	6	87	..	27	55	18	..	73
Crosby's Egyptian L1.7M Associated Seed Growers	57	1	10	89	..	18	69	13	..	51
Crosby's Egyptian J. M. Lupton and Sons	62	30	..	68	..	25	56	19	14	73
Early Wonder 332-62 F. H. Woodruff and Sons	74	9	4	86	..	11	89	..	..	47
Early Wonder 9309 Ferry-Morse Seed Co.	67	3	5	92	..	10	82	8	..	28
Crosby's Egyptian 72/13 Alexander Forbes and Co.	59	10	19	71	..	6	45	49	100	39
Early Flat Egyptian J. M. Lupton and Sons	68	..	16	19	64	27	62	11	14	81

tinct zones. On the other hand, it was less productive than any other strain. Undoubtedly through its improvement by selection and inbreeding, considerable productivity has been lost. The seed did not germinate as well as others, and the plants were smaller and slower growing.

Ohio Canner, a product of the Ohio Experiment Station, was similar to Good-For-All. Both beets were uniform, free from distinct zones, quite dark, but slow growing and small.

Strain 9011 from Ferry-Morse was productive; the roots and tops were large and fast growing. Although 17 per cent were medium in color, none of the roots had distinct zones.

Detroit Dark Red from J. M. Lupton and Sons was outstanding in color. All of the roots were dark and only 2 per cent had distinct zones. In shape this beet had only 10 per cent of true globe type. The others were a deep top, almost spherical.

Spinach

The following spinach varieties grown at Windsor this year were planted April 8.

Virginia Savoy	J. M. Lupton and Sons.
Bloomsdale Savoy Extra Dark Green 281	F. H. Woodruff and Sons.
Reselected Savoy 381	F. H. Woodruff and Sons.
Bloomsdale Savoy	J. M. Lupton and Sons.
Long Standing Bloomsdale 345	Joseph Harris Seed Company.
Long Standing Bloomsdale 385	F. H. Woodruff and Sons.
Long Standing Savoy T530.2	Associated Seed Growers.

Virginia Savoy from J. M. Lupton and Sons was the fastest growing strain. It was productive, well curled, and uniformally dark green in color. It was ready to cut on May 20, but did not stay long in marketable condition.

Bloomsdale Savoy Extra Dark Green (281 from F. H. Woodruff and Sons) was the largest growing strain, and the most productive. However, it was no darker than the other strains, and not so well curled. It was ready to cut 6 days later than Virginia Savoy from Lupton's.

Reselected Savoy (381 from F. H. Woodruff and Sons) had a thinner leaf than other strains of Savoy; it was also ready to cut on May 26.

All of the Long Standing Savoy strains, although slower, were similar in growth and were ready to cut June 1. The advantage of this type is its ability to stay in marketable condition for a longer period than the other varieties.

Celery

The six strains of celery planted at Windsor made a remarkable growth. Each strain was uniform in size, color, and quality.

The seed was planted April 20 in cold frames and the plants were transplanted to the field on July 15. The crop was ready to harvest by the middle of September.

Florida Golden, a new selection of the Golden Phenomenal type, was grown this year. The bunches of this celery were small and slender. The length of the stalks to the first node was from 7 to 11 inches, and of the entire plant, 21 to 25 inches.

When compared with Florida Golden, Golden Phenomenal was more spreading and larger in girth. The length of the stalks to the first node was from 8 to 13 inches and the total length of the plant was from 21 to 26 inches.

Golden Plume, an old variety, and Wonderful from F. H. Woodruff and Sons were very similar. These produced short, thick bunches. The length of the stalks to the first node was from 6 to 11 inches for the Golden Plume; for the Wonderful, from 5 to 9

inches. The stalks of the Wonderful variety were broader at the base than were those of Golden Plume.

Two strains of the Giant Pascal type, which are called Utah Golden Crisp and Salt Lake, were identical. This so-called new celery has been grown in the Salt Lake Basin for several years and has been very popular on some markets. It does not blanch easily. The stalks were brittle, almost stringless, and of excellent quality; their length to the first node was from 7 to 14 inches. Because of its green color, this variety is not popular in Connecticut markets.

Peppers

The pepper trials attracted considerable attention this year. The new pepper Bountiful 7, which was originated at the Mount Carmel farm, was the highest yielding and earliest of any of the early varieties and it was second in total production. It is yellowish green in color, irregular and pointed. Most growers think that there will be a limited demand for this variety on the Italian markets.

The heavy-walled stuffing peppers are usually much lighter in yield and not as early as the thin-walled varieties. World Beater ("C" from the Associated Seed Growers) was an exception to this case. This variety was highest in total yield. However, its productivity came toward the end of the season when the price of

TABLE 3. PEPPER VARIETY TRIALS, WINDSOR

Variety	Yield to August 1		Total Yield	
	Average weight of fruit, ounces	Yield per acre, pounds	Average weight of fruit, ounces	Yield per acre, pounds
Harris Earliest Joseph Harris Seed Co.	1.6	5,034	1.7	13,165
Bountiful 7, Connecticut Station	1.6	8,615	1.9	17,618
Harris Early Giant 443 Joseph Harris Seed Co.	2.3	5,711	2.4	12,487
Harris Improved Squash 445 Joseph Harris Seed Co.	2.1	5,560	2.2	10,745
Oshkosh 446 Joseph Harris Seed Co.	3.0	5,560	4.0	13,939
Ruby King D71.1 Associated Seed Growers	1.9	2,904	3.0	8,518
World Beater "C" Associated Seed Growers	2.4	3,775	3.8	19,070
California Wonder D71.4M Associated Seed Growers	3.7	3,969	4.4	9,196
California Wonder 648 Ferry-Morse Seed Co.	3.1	4,840	4.3	10,067

peppers was low. California Wonder, an ideal stuffing pepper, is usually considered unprofitable to grow because of its low yield and late production. If quality of product is any factor in choosing pepper varieties for planting, this variety should be given more consideration.

Peppers were handled in the same way as the tomatoes, and planting dates were the same in each case. The peppers were planted 2 by 3 feet.

FIGURE 2. Transplanted lettuce, set in the field April 8 and ready for market June 15.

Lettuce

Twenty-one strains of lettuce from both plants and seed were grown this year. The transplanted lettuce was planted in flats in the greenhouse March 1, and set directly to the field on April 8. On the latter date, seed of the same strains was planted in the field. Both lots were planted in duplicate and each received identical treatment. The transplanted lettuce was ready to cut on June 15 and the seeded on June 30.

The number of heads produced in both lots clearly indicates that some strains can be either transplanted or seeded. In all but three cases the transplanted lot produced a higher percentage of heads than the seeded: Imperial D from F. H. Woodruff and Sons produced 22 per cent more marketable heads in the seeded lot, and

New York 506 from the Joseph Harris Seed Company produced 22 per cent more marketable heads in the transplanted lot.

New York No. T297.3 from the Associated Seed Growers produced 99 per cent marketable heads in the transplanted trial, and 92 per cent in the seeded trial. This strain produced the largest heads of any strain. The size of these heads was, in the opinion of some market gardeners, too large. On the other hand, they were of excellent quality.

TABLE 4. LETTUCE STRAIN TRIALS

Strain			Per cent Marketable Heads	
			Transplanted	Seeded
New York	T297.3	Associated Seed Growers	99	92
New York	D296.1	Associated Seed Growers	87	68
New York	487	Joseph Harris Seed Co.	88	77
New York	506	Joseph Harris Seed Co.	92	70
New York	1-235	F. H. Woodruff and Sons	88	82
New York	1314–1	Alexander Forbes and Co.	88	81
New York	(W1932)	Caldwell and Jones	92	79
New York	236/24	Alexander Forbes and Co.	85	77
New York	2-50-326	F. H. Woodruff and Sons	60	64
Imperial	F.26807x	Associated Seed Growers	90	77
Imperial	F.1-3104	F. H. Woodruff and Sons	77	71
Imperial	C.1-3105	F. H. Woodruff and Sons	62	70
Imperial	D	F. H. Woodruff and Sons	65	87
Wonderful	1-115	F. H. Woodruff and Sons	63	60
Mountain Iceberg		Rocky Ford Cantaloupe Seed Breeders	67	84

Carrots

Carrots planted April 8 failed to make a satisfactory stand. A second planting was made May 15 which was ready to pull on the first of August.

With two or three exceptions, the strains were consistent as to type and size. Considerable differences were shown, however, in the percentages of roots having an indistinct core. Among the Red Cored Chantenay strains, in which the central core is supposed to be the same color as the outer cortex, this difference ranged from 81 per cent in the strain D174.2 from the Associated Seed Growers, to 63 per cent for strain 114 from F. H. Woodruff and Sons.

The 1931 and 1932 observations on Oregon Chantenay give a striking example of the variability of the same strain of seed produced in different seasons. In 1931, 100 per cent of these roots were Chantenay type and 80 per cent had indistinct core. In 1932, only 55 per cent were Chantenay type and only 63 per cent had indistinct core.

TABLE 5. CARROT VARIETY TRIALS, WINDSOR

Variety	Per Cent Marketable Roots								
	Grade	Type				Size			
	Marketable	Danvers	Chantenay	Nantes	Oxheart	Small	Medium	Large	Indistinct core
Red Cored Chantenay 9271 Ferry-Morse Seed Co.	87	2	98	..	..	12	75	13	68
Red Cored Chantenay D174.2 Associated Seed Growers	86	..	100	..	..	1	74	25	81
Coreless Chantenay 114 F. H. Woodruff and Sons	89	2	76	21	1	8	81	11	63
Red Cored Chantenay 60463 Ferry-Morse Seed Co.	94	4	92	2	2	9	83	8	66
Red Cored Chantenay Francis C. Stokes Seed Co.	92	..	97	..	3	19	60	21	71
Red Cored Chantenay 83G Ferry-Morse Seed Co.	88	9	88	3	..	5	86	9	68
Red Cored Chantenay 326 F. H. Woodruff and Sons	94	11	88	..	1	36	52	12	70
Oregon Chantenay Gill Brothers Seed Co.	92	37	55	5	3	25	73	2	63
Chantenay 1-251 F. H. Woodruff and Sons	92	4	95	1	..	21	66	13	60
Chantenay Francis C. Stokes Seed Co.	92	1	98	..	1	11	78	11	59
Chantenay 7100 Associated Seed Growers	90	8	79	3	10	21	58	21	51
Chantenay 303 Joseph Harris Seed Co.	83	..	86	5	9	42	54	4	91
Danvers 9220 Ferry-Morse Seed Co.	77	86	11	3	..	11	64	25	19
Danvers 1-315 F. H. Woodruff & Sons	84	56	32	12	..	11	69	20	33
Perfection 296 Joseph Harris Seed Co.	92	62	12	26	..	25	57	18	61
Tendersweet 308 Joseph Harris Seed Co.	85	46	51	3	..	..	74	26	71
Imperator D180 Associated Seed Growers	69	65	29	6	..	29	59	12	61

Squash

Three strains of Giant Summer Straight Neck squash, selected as the most promising of the various lots in 1931, were grown again at Windsor this year. They were planted under hotcaps May 11. Two rows of each strain were planted 4 feet apart with 8 feet between strains. The first squash were picked July 11. The number of fruit in the first three pickings indicates the earliness of the

TABLE 6. STRAIGHTNECK SQUASH, WINDSOR

Source of Seed	Yield number squash per acre		Shape	Color			
	First 3 pickings	Total	Per cent straight	Per cent light	Per cent medium	Per cent dark	Per cent green
F. W. Eberle 417	2440	21,867	88	91	9	..	..
Joseph Harris Seed Co. 501	5405	23,872	93	84	14	1	1
F. S. Platt Seed Co. 1320-3	3763	22,735	89	14	60	24	2

strain. Yield records were taken until August 26, after which squash was of little commercial value.

The 1932, like the 1931 trials, show that appreciable differences exist between the strains in the production of early fruit.

The number of fruits in the first three pickings from the Joseph Harris Seed Company strain 501 was more than twice that of strain 417 from the F. W. Eberle Seed Company, and one-fourth more than strain 1320-3 from the F. S. Platt Seed Company. The differences between the total yields, however, were not significant.

Both the Harris and Eberle strains were predominately light in color, while the Platt strain was medium to dark in color.

The number of crookneck fruits was about the same for each strain.

Sweet Corn

The early sweet corn trials at Windsor included five varieties. Seed was planted on May 10 in 3 foot rows with 2 feet between hills, 3 stalks in each hill.

Spanish Gold, which has been the earliest and most productive for the past two years, made the best record again this year. It produced the first ripe ears 7 days ahead of the next earliest variety. The ears were somewhat smaller than Golden Early Market, Extra Early Golden and Golden Sunshine. Spanish Gold had mostly 12 rows and were 8 to 9 inches long. Five dozen ears filled a bushel box.

Extra Early Golden and Gill's Early Market were about the same in total number of ears per acre. Golden Sunshine and Extra Early Bantam were three days later than Extra Early Golden and Gill's Early Market. The total number of ears to the acre for Golden Sunshine was considerably larger than any of the others except Spanish Gold. Table 8 gives the date on which these varieties were picked and the total number of ears to the acre.

In addition to the five varieties listed, 18 first-generation hybrids and top crosses were planted. Among these were Gold Cross A, B, C, and D, produced by crossing inbred lines of Whipple's Yellow. During the past season these hybrids were grown in limited amounts by commercial growers throughout the state. The outstanding characteristic of this corn was its uniform production of large, brightly colored ears, and evenness in maturity. Seed of Gold Cross for trial may be obtained from the Department of Plant Breeding, Connecticut Agricultural Experiment Station, New Haven, Connecticut. Golden Cross Bantam and Top Crossed Bantam, products of the Indiana Agricultural Experiment Station, gave a large production of uniform, well-filled ears of excellent quality, ripening later than Gold Cross. Seed for commercial planting in 1933 is available.

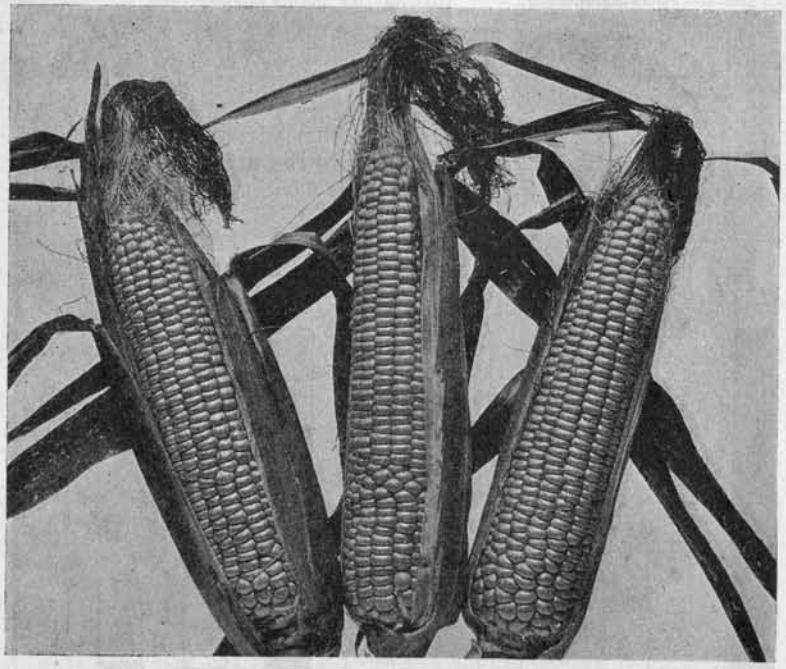

FIGURE 3. Gold Cross sweet corn, a hybrid of inbred strains. It produced large brightly colored ears and ripened evenly.

The same varieties of sweet corn grown at Windsor were also grown at Mount Carmel. Two different plantings were made. Corn that was planted on April 28 was ready to harvest on July 19 and 21. Of the second planting, made on May 14, Spanish Gold

TABLE 7. SWEET CORN VARIETIES AT WINDSOR

Variety	Date of first picking	Number ears per acre
Spanish Gold	July 22	20,620
Golden Sunshine F. S. Platt Seed Co.	" 28	16,569
Extra Early Golden Comstock-Ferre and Co.	" 25	11,465
Extra Early Bantam Joseph Harris Seed Co.	" 28	11,362
Gill's Early Market Gill Brothers Seed Co.	" 25	11,177

was ready to pick on July 21, while other varieties were not marketable until July 26. Figure 4 shows the number of thousands of ears per acre that were picked on the various dates.

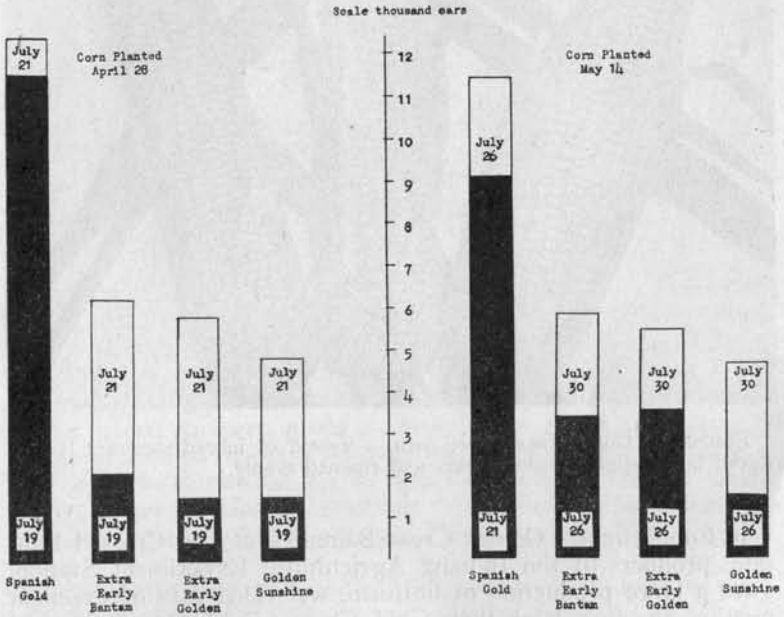

FIGURE 4. Chart showing the production of sweet corn varieties planted on different dates.

Tomatoes

Within recent years modern transportation has brought main crop tomatoes from Maryland and New Jersey in large volume to compete with the early native varieties. The tendency is, therefore, for New England growers to plant only main-season varieties. Of this group the Bonny Best in the past has proved superior. Many strains of this variety have been found to be equally as early as the average Earliana and they have the additional advantage of producing until frost.

Sixteen different tomato varieties were grown at Windsor this year. The highest yield per acre was 1025 bushels for Clark's 100

TABLE 8. TOMATO VARIETY TRIALS, WINDSOR

Variety	Yield to August 1		Total yield to September 12	
	Average weight of individual fruit, ounces	Yield per acre, pounds	Average weight of individual fruit, ounces	Yield per acre, pounds
Clark's No. 100 D47.3M Associated Seed Growers	3.6	428	6.0	57,432
Break O'Day	5.0	602	6.2	53,714
Clark's Hybrid No. 2 D46-2M Associated Seed Growers	4.3	83	7.0	52,194
Clark's B L41-1M Associated Seed Growers	2.5	52	5.8	50,581
Pritchard	6.5	996	5.6	49,782
John Baer 563 Joseph Harris Seed Co.	4.2	1193	4.5	48,279
Clark's Early L45.6M Associated Seed Growers	4.5	1232	5.8	47,283
Special Marglobe 320 F. H. Woodruff and Sons	3.6	117	6.3	45,768
Harris Early Stone 534 Joseph Harris Seed Co.	4.0	239	6.4	44,972
Clark's Early HybridNo.1 T46.1M Associated Seed Growers	3.3	33	6.3	41,693
Bonny Best Campbell Soup Co.	...	....	5.3	40,708
Harris Success 476 Joseph Harris Seed Co.	3.7	723	4.6	36,923
Bonny Best 320 F. H. Woodruff and Sons	4.4	757	4.5	36,243
Canadian 530 Joseph Harris Seed Co.	4.0	1221	5.3	36,092
Cortland Forrest Seed Co.	3.3	865	4.8	31,752
Late Bonny Best 596/40 Alexander Forbes	...	....	6.0	31,752

(D47.3M, the Associated Seed Growers). This did not come into production until the last week in July. The early fruit was small, yet smooth and deep red in color. The later fruit was rather large, the average being 6 ounces.

The Break O' Day was second in total yield and it was rather early. Its light and uneven coloring makes it undesirable.

Clark's Hybrid No. 2 (D46.3M from the Associated Seed Growers) was third in production. This variety had the largest fruit of any grown, the average being 7 ounces. It is decidedly not early; less than 2 bushels to the acre were picked before August 1.

Late Bonny Best (596/40, the Alexander Forbes Seed Company) was lowest in yield; 567 bushels per acre were picked as against 1025 for the highest yielding variety. Of the early types, Clark's Early (L45.6M, Associated Seed Growers) was first. It yielded 22 bushels per acre before August 1. The fruit was free from cracks, had a deep red color, and a fair size, averaging 4.5 ounces. It continued to produce marketable fruit throughout the season.

The second earliest was Canadian (530, Joseph Harris Seed Company). The fruit was somewhat smaller than Clark's Early and it was rougher and less desirable in shape. The vines dried up and the yield ceased long before any of the others except Cortland.

Cortland from the Forest Seed Company was very similar to Canadian in every way except in yield.

Other early varieties were John Baer (563, the Joseph Harris Seed Company) and Pritchard. The John Baer yielded well toward the end of the season, but the fruit was small and somewhat rough.

The Pritchard, a new variety produced by the United States Department of Agriculture, was indeed an outstanding tomato. Although it was not the highest yielding of the early types nor first in total yield, it was highest in average weight of fruit during the first part of the season. The quality was excellent, the fruit being smooth, free from cracks, and uniform in color. In fact, the Pritchard promises to be a competitor of the Bonny Best for the most popular main season variety.

Appendix

Seed firm	Address
Associated Seed Growers	New Haven, Conn.
Cadwell and Jones	Hartford, Conn.
Comstock, Ferre & Co.	Wethersfield, Conn.
Eberle, F. W.	Albany, N. Y.
Ferry-Morse Seed Co.	Detroit, Mich.
Forbes, Alexander, & Co.	Newark, N. J.
Forrest Seed Co.	Cortland, N. Y.
Gill Brothers Seed Co.	Portland, Ore.
Grand Junction Seed Co.	Grand Junction, Colo.
Harris, Joseph, Seed Co.	Coldwater, N. Y.
Lupton, J. M., & Son	Mattituck, N. Y.
Platt, F. S., Seed Co.	New Haven, Conn.
Rocky Ford Cantaloupe Seed Breeders	Rocky Ford, Colo.
Stokes, Francis C., & Co., Inc.	Box 923, Philadelphia, Pa.
Woodruff, F. H., & Sons	Milford, Conn.